The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P. O. Box 104, Cambridge 38, Massachusetts
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Edited by C. L. REMINGTON and H. K. CLENCH

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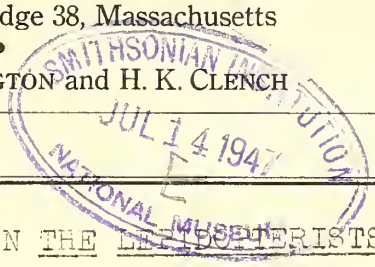

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Vol.I, No.1 May, 1947

WELCOME TO CHARTER MEMBERSHIP IN THE LEPIDOPTERISTS' SOCIETY !

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Here is the first number of the periodical announced in the March letter. The first few numbers, like this one, will each contain twelve mimeographed pages, and in this first issue are several of the regular features which are planned for your interest and enlightenment. On page 3 is the review of Ford's Butterflies, which will be followed regularly by reviews of other books of direct interest to Lepidopterists. Pages 4-7 carry monthly notices of papers on Lepidoptera in the current literature. Page 8 contains the first of a series of brief biographies of important American and foreign Lepidopterists. Page 9 introduces a series of discussions on life history studies of Lepidoptera, concerned more with methods of study than with published papers and books. Pages 10-12 are devoted to collecting trips planned by members, your list of exchange notices and other requests, and miscellaneous items. We urge you to contribute items for these pages. In the serial subjects, such as on pages 3, 8 and 9, we expect to be able to present articles by authorities on specific phases of the subjects. The final issue of the year will be accompanied by a list of the names, addresses, and special interests of all members.

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Please note that the permanent designation of the association is THE LEPIDOPTERISTS' SOCIETY. The word "Union" caused so much valid comment because of its connotations, that "Society" was substituted. Also note the PERMANENT ADDRESS OF THE SOCIETY IS P.O. BOX 104, CAMBRIDGE 38, MASS.

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We wish to express our delight at the enthusiastic reception given the plan to organize the Society, and the warm generosity so many of you have shown in contributing much more than the minimum $1.00, to give the NEWS a proper send-off. Those who have contributed to the Society are: J.W. Adams, C.W. Baker, Wm. Bauer, Mrs. M.M. Cary, A.C. Frederick, P.A. Glick, S.A. Hessel, J. Kaiser, A.W. Lindsey, R.R. McElvare, H.I. O'Byrne, C.F. dos Passos, G.J. Rawson, P.S. Remington, W.P. Rogers, L.R. Rupert, D.B. Stallings & J.R. Turner, and H.E. Woodcock. To them we are particularly grateful. At the time of mimeographing this number, membership slips and dues had been received from 101 of the 330 recipients of the letter of announcement, and the remarkable total of $141.25 had been accepted! Please regard your receipt of this number as the acknowledgement of your remittance.

In order to have a guiding policy we found it desirable to write out articles of organization of the Society. We believe it will help you to appreciate better the aims of the Society and will keep us in line with the policy if we present these articles in the first number of the NEWS. Of course these articles can have no official standing unless they are approved by the members, and this seems unnecessary at present. However, we earnestly invite your comment on any parts of the Articles.

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ARTICLES OF ORGANIZATION

Article I. The name of the organization shall be THE LEPIDOPTERISTS' SOCIETY. It shall be a non-profit organization.

Article II. The aim of this organization shall be:
To promote the scientifically sound and progressive study of Lepidoptera by: 1) distributing a periodical on Lepidoptera; 2) facilitating the exchange of specimens and ideas by both the professional worker and the amateur in the field.

Article III. The Periodical.

1. The name of the periodical shall be THE LEPIDOPTERISTS' NEWS.
2. The periodical shall be monthly and shall be mimeographed.
3. The number of pages shall depend upon the receipts from membership dues and contributions.
4. The contents of the periodical shall be:

A. Reviews of pertinent published work on macro-Lepidoptera, particularly Rhopalocera. A thorough effort shall be made to include all papers on North American Rhopalocera and the more important works on other macro-Lepidoptera and exotic Rhopalocera.

B. Reviews of more general biological publications of particular interest to lepidopterists.

C. Collecting and rearing notes and curatorial suggestions contributed by members.

D. Concise articles on technical subjects by specialists. (Taxonomic articles, other than reviews of published works, will be omitted).

E. A column carrying exchange notices of members.

F. Listings of new members.

G. Such other items as may prove of special interest.

5. A list shall be maintained containing the names of specialists who have agreed to identify material in the groups in which they are recognized authorities. The ranges of these specialists shall cover all groups of North American Rhopalocera, so that there should be no reason for misidentifications in papers published by members of the SOCIETY. Where possible there shall be added to the list names of specialists willing to identify exotic butterflies and various groups of North American moths.

Article IV. Membership in the SOCIETY shall be open to all persons interested in the study of Lepidoptera who subscribe to the NEWS.

Article V. The activities of the SOCIETY shall be handled entirely through the medium of the NEWS and its editors. No meetings are contemplated, and the organization will not require elected officers.

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Insects

1. Butterflies by E.B. Ford*

This is a book on the butterflies of the British Isles, but in the manner of its treatment of the subject it will be of wide interest to butterfly collectors everywhere. Dr. Ford has in effect used the British butterfly fauna as a tool for a thorough discussion of the science of the study of butterflies in general. The following list of the chapter titles indicates the breadth of the work:

1. History of British Butterfly Collecting
2. Structure & Development of Butterflies
3. Senses & Colours of Butterflies
4. Principles of Classification
5. Habits & Protective Devices
6. Relations with Other Insects
7. Distribution
8. Dispersal
9. Theoretical Genetics
10. Practical Genetics & Breeding
11. Genetic Interactions
12. Evolution
13. Races & Sub-species of British Butterflies
14. Origin of British Butterfly Fauna

Added to this are: a list of the scientific and English names of the British species, a glossary of technical terms, an extensive bibliography covering many branches of the field, distribution maps of the British species and the 34 colored and 24 black and white plates, showing living and mounted adults, early stages, internal and external morphology, historic butterflies, racial, seasonal, and induced genetic variation, sexual abnormalities, aberrants and many others. Examples of typical or famous British localities are shown in the uncolored plates. The colored plates are reasonably accurate and illustrate well the many phases of butterfly science which Dr. Ford discusses in the text.

Dr. Ford is Reader in Genetics at Oxford University and his treatment of butterfly genetics is especially authoritative. He begins it thus: "Genetics is the study of heredity and variation: it is therefore a subject of special value to the collector of butterflies. Not only does it enable him to appreciate the significance of the otherwise chaotic mass of individual aberration which he meets, but it invests it with that interest which knowledge alone can supply. Further, it provides opportunities for amateur scientific research of real value which, in my experience, a large number of collectors would be eager to undertake within the ordinary limits of their hobby if they could see more easily how to conduct it." His three chapters then present an unusually lucid, simple introduction to butterfly genetics which alone gives the book added value for all Lepidopterists.

The use of British material has been a bit too severe. Some deviation from this rule could have been made very profitably in certain cases. The book is the first of its kind to appear on butterflies, and should serve as a model to those attempting a faunistic study of other equally restricted regions. It is readable, highly informative, accurate, and well-illustrated. Anyone seriously interested in the study of Lepidoptera would profit immensely from it.

Harry K. Clench

* Butterflies, by Dr. E.B.Ford(xiv,368 pp.,48 color,xxiv plain plates, large 8vo) is published by Collins, St.James's Place,London,England, as the first in the "New Naturalist" series. It may be obtained from John D. Sherman,Jr., 132 Primrose Ave., Mt.Vernon,N.Y.($5.00), or through any book store.

RECENT PAPERS ON LEPIDOPTERA

Under this heading will be listed each month papers on Lepidoptera which have appeared in American and foreign journals, and which are of particular interest to American Lepidopterists. In most cases notes will be very brief, but new names and changes in the synonymy will always be given, and in some cases detailed comment will be presented on important points. For this first number all papers known to us published since the end of 1945 were examined. We invite authors to send us a few reprints of any of their new papers which appear, and we will send them to the first members who write in requesting them.

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1. Bell, E.L. "New Species and Subspecies of Neotropical Hesperiidae". American Museum Novitates No. 1330, 9 pp. Feb. 11, 1947. Describes as new 9 spp. and 5 subspp. from S.& C. America, esp. Brazil.

2. Chermock, Ralph L. "Migration in Ascia monuste phileta." Entomological News, vol. 57: 144-146. June 1946. Records migrating forms of this pierid in Florida, suggesting explanations based on the papers of the great population geneticists, Wright and Timofeef-Ressovsky.

3. Dethier, V.G. "Supplement to the Bibliography of Described Life Histories of the Rhopalocera of America North of Mexico." Psyche, vol. 53: 15-20. Mar.-June, 1946. Adds references on 50 spp., largely from Dr. Dethier's diligent efforts to fill in the gaps in butterfly life histories. A supplement to the Dethier & Davenport bibliography (Entomologica Americana, vol. 17, no. 4. 1938).

4. dos Passos, C.F. "Notes on Grinnell's Types of Erynnis Schrank." American Museum Novitates No. 1337, 3 pp. Feb. 24, 1947. Based on specimens in collection of the writer from the Gunder Collection. Designates male co-type as lectotype of E. callidus, with lacustra not the same thing, although Grinnell had lacustra in the type series of callidus. On basis of male genitalia, E. pernigra found to be a subspecies of callidus, not persius, as considered by various authors. Finds E. lilius a recognizable race of callidus, occurring from northern California to British Columbia. With these corrections, the McDunnough Check List(1938) should read as follows:

549 callidus Grin.
a pernigra Grin.
b.lilius Dyar

5. Franclemont, J.G. "A Revision of the Species of Symmerista Hübner Known to Occur North of the Mexican Border (Lepidoptera, Notodontidae)." Canadian Entomologist, vol.78:96-103, 2 plates. May, 1946. Careful analysis of 5 N.Am. spp., based on male and female genitalia. S. leucitys and S. canicosta, both from N.E. U.S. described as new.

6. Freeman, H.A. "Two New Species of Skippers from North and Central America." Entomological News, vol.57:185-187, 2 figs. Oct., 1946. Describes as new Celaenorrhinus stallingsi and Calpodes evansi, both occurring at Pharr, Texas.

7. Leighton, Ben.V. "The Butterflies of Washington", Univ. of Washington Publ. in Biology Vol.9, No.2: 47-63. Seattle. Nov., 1946.

143 species and 81 varieties of butterflies (including skippers) are listed in annotated form, with specific Washington localities and symbols for the seven collections forming the basis of the records. The nomenclature and sequence of species follows the 1938 McDunnough Check List of the Lepidoptera of Canada and the United States. Apparently the guide for identifications was Holland's Butterfly Book (rev. ed.,1931). It is a credit to Mr. Leighton that considerable effort was made to include records from several large collections in addition to his own, particularly those of Hopfinger, Clarke, and Frechin. As far as we know, these are the first published records of some of Hopfinger's fine captures, such as Oeneis beani and Brenthis astarte.

It is most unfortunate that in a large number of species the records are of little value. Butterfly taxonomy in most groups has come a long way since Holland's book was published, as a result of papers on the Argynnini by Grey & dos Passos and studies on Colias by Klots, Satyridae by dos Passos, Incisalia and Callophrys by Clench, and the blues by Nabokov and others. Had Mr. Leighton searched out these specialists to have identifications verified, his check list would have become a valuable reference list in distributional studies. However, his records in the above mentioned groups as well as Euphydryas and Melitaea, Phyciodes, Polygonia, probably Lycaena, and Erynnis and Pesperia are open to considerable doubt and in several instances are unquestionably incorrect. In a number of cases names of different geographic races are applied to specimens from nearby localities, but taken by different collectors, and it therefore appears that Mr. Leighton did not actually see nearly all of the specimens recorded.

Such faunistic studies as the Leighton list can have a very significant place in Lepidoptera study, but the identifications must be authoritative. Otherwise more harm than good results, since later workers will waste valuable time trying to back-check the apparently erroneous records. Mr. Leighton is not to be singled out as a lone offender. His methods have been employed almost universally by previous compilers of state lists. It is to improve the level of such work in the future that the Society has organized for its members an identification "service" comprised of a board of established authorities in specific groups of butterflies and some moths. The functions of this board are presented on page 11.

Leighton has indicated that he will welcome corrections and additions for a possible supplement to be prepared in the future. He will perhaps be able to furnish reprints to a limited number of interested members. His address is: Shelton, Washington.

8. McDunnough, J. "New North American Phalaenidae with Notes." Can.Ent., vol.78:28-35. Feb., 1946. Describes as new: Euxoa leucoptera, E. simulata, E.johnstoni, E.altens (all West Coast), Agrotis orthogonoides(Utah), Anaplectoides brunneomedia(Va.), Abagrotis denticulata(Calif.), Polia frustrata(Newf.), Amiotype pallescens(Ariz.), Aparetra californiae(Calif.), Eupsilia knowltoni(Utah), Hypoa contrasta(Va.), Heliothodes joaquin (Calif.). Eumichtis

gunderi B.& B. becomes a race of Platypolia loda Stkr. No figures.

9. McDunnough, J. "The Species of the Truncata Group of the Genus Dysstroma (Lepid., Geometridae)." Can.Ent., vol.78:71-78, 1 plate. Apr., 1946. D. sobria, D. truncata & forms traversata & ochrofuscaria, D. walkerata, D. citrata, D. infuscata redescribed with figures of male or female genitalia.

10. McDunnough, J. "New North American Eupithecias, II (Lepid., Geometridae)." Can.Ent., vol.78:86-89, 1 plate. Apr., 1946. Describes as new: E. plumasata(Calif.), E. sinuata(Ariz.), and E. deserticola(Calif.), with figures of male or female genitalia of each species.

11. McGuffin, W.J. "Larvae of Some Canadian Geometridae." Can.Ent., vol.78:160-162, 2 figs. Sept.-Oct., 1946 (1947). Keys the last instar larvae of Eupithecia, Nyctobia, Hydriomena, Semiothisa, Eufidonia, Melanolophia, Protoboarmia, Paraphia, Nepytia, Lambdina, Faro, and Jaribeta, based on only 1 species in all but 3 genera. A very useful type of paper, much needed for butterflies as well as moths.

12. Potts, R.W.L. "Two New Variants in California Colias eurytheme." Bulletin So. Calif. Academy of Sciences, vol.44:49-50. Sept. 14, 1945. A most remarkable paper, because interesting aberrants are described but not named. The author's abstract is here quoted verbatim: "Two apparently new variants of the highly variable C. eurytheme complex are deserving of description. Names have not been applied inasmuch as the author feels that it is not desirable to propose names which would inevitably be placed as synonyms since their grade would so definitely be below that of the subspecies, the lowest category recognized by the International Rules of Nomenclature." To which we add a fervent "Amen!"

13. Stallings, Don B. & J.R.Turner "New American Butterflies". Can. Ent., vol.78:134-137, 1 fig. July-Aug., 1946. Describe as new: Boloria freija nabokovi (Alcan Highway), B. toddi jenistai(Sask.), Coenympha gemma freemani & its"form hiemalis" inductura, and Euchydryas anicia howarthi. Since so many of our members are butterfly, rather than moth specialists, we will comment on it more than usual, particularly since this paper bears some of the characteristics which have brought universally unfavorable comment on Lepidopterists by professional entomologists specializing in other orders. Nabokovi is a sample of the remarkable degree of darkening which appears on specimens collected from parts of the Alcan Highway, a region now fairly accessible to collectors and from which large collections are needed. The little sample which has been taken is tantalizing. As the authors hint, nabokovi is doubtfully distinct from B. freija natazhati, and it is the opinion of the reviewer that it would have been better to postpone the erection of another potential synonym until a more extensive series and better geographical coverage were available. Jenistai calls forth similar comment, since Ontario and Quebec, the critical regions in the erection of this new race, apparently were not represented, and the Manitoba specimens were admittedly intermediate between

toddi and jenistai. Freemani and howlandi may prove to be valid. However, there seems to be no sound reason for naming inductura, nothing more than a seasonal form. As a quadrinomial it has no standing under the International Rules of Zoological Nomenclature. Even though it were valid on that basis, there appears to be no reason to give Latin ("scientific") names to seasonal forms. Such a practice amounts to the presentation of the offspring with a separate name merely because the species is multi-brooded. The reviewer contends that in most or all species with more than one generation per year, distinct and consistent pattern and color differences are present, although in many cases these differences may be slight. Therefore, why not give a name to the broods of every multi-brooded species? The chaotic consequences of such a step are obvious, and the only course open to a workable and consistent system is to abandon all seasonal names, discarding them with their equally useless brethren, the aberrational names. It seems probable that the eventual system of classification below the rank of species will arise to have genetic basis. It is to be regretted that such capable Lepidopterists as Mr. Stallings and his associates expend their time and energy on seasonal forms and uncorrelated "races". We consider their excellently illustrated paper on aberrations in Strymon, which settled the position of S. hesta, to be of the most useful contributions to butterfly taxonomy in the last few years. Interestingly enough, no new names were then proposed for the striking aberrations figured.

14. Stallings, Don B. & J.R. Turner "Texas Lepidoptera." Entomological News, vol.57:44-49. Feb., 1946. Records remarkable captures of butterflies by H.A. Freeman at Pharr, Texas, with 40 spp., of which 7 are new U.S. records: Ibiconius petiverana, Biblis hyperia aganisa, Cyclogramma astoria, Chlorippe pavon, Anaea glycerium, Ebusia ebusia, Thecla bezoculi. Freeman even reported seeing a Morpho, which escaped his net! Many species formerly considered strays to the U.S. were found native by Pharr.

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BRIEF BIOGRAPHIES

1. William Henry Edwards (1822-1909)

William Henry Edwards was born on the 15th of March, 1822, at Hunter, New York, into an old New England family. His early education was received at the Hunter village school, from which he entered Williams College.

In 1846, shortly after his graduation from college, he made a trip up the River Amazon, and the narrative he wrote of his voyage long served as the most reliable guide for travelers in that region--a tribute to the accuracy of observation which later became so apparent in his studies of North American butterflies.

After his admission to the New York Bar in 1847 he made his home for awhile in Newbury, New York, going from there to Coalburgh, West Virginia, where he became the owner of extensive lands, and president of the Ohio and Kanawha Railroad. This locality was soon a byword to Lepidopterists of the era, and many rare species (such as that perennial prize, Erora laeta) fell to his net there.

From 1847 until 1898 Edwards published a total of 256 papers. In them he described as new more North American butterflies than can be credited to any other author. The monumental work of his life is, of course, the well-known "Butterflies of North America" which appeared in parts from 1868 to 1897. In this work, as well as in many of his shorter papers are to be found the life histories of North American butterflies. Edwards' talent in rearing rare butterflies from eggs is justly admired, and he is to be thanked for a large part of our present knowledge of this neglected line of study. It is unfortunate that his greatest work was so expensive, and so poorly subscribed that it nearly cost the United States the Edwards collection. His friend of later years, W.J. Holland, who greatly admired both the man and his work, was fortunately well enough situated to assume financial responsibility for the work, and in return Edwards promised him his collection, when he no longer needed or wanted it. His former plan had been to sell it to the British Museum, but under this arrangement it passed into Holland's hands, and with the latter's collection is now in the Carnegie Museum.

His circle of friends among Lepidopterists was wide, numbering such other luminaries as Scudder, and the famous collector of the day, Bruce, with whose diligent field work in Hall Valley, Colorado, he made known a large number of western species. Edwards and Scudder corresponded and exchanged considerably, as the pages of the latter's "The Butterflies of New England" and the collections at Harvard's Museum of Comparative Zoology show.

In 1898, shortly after the completion of his great work, he published his last paper on butterflies in the CANADIAN ENTOMOLOGIST (Vol.30,p.11), entitled "Further observations on Papilio bairdii Edw." Perhaps disappointed over difficulties he had had with his "Butterflies of North America" he gave up completely his work on butterflies and spent the few remaining years of his life compiling a genealogy of the Edwards family and writing a few dissertations on Shakespeare.

At his home in Coalburgh, on the 4th of April,1909, he passed away. Notices of his death appeared in the CANADIAN ENTOMOLOGIST and ENTOMOLOGICAL NEWS for that year, and these were copied in entomological journals around the world, their length and treatment attesting to the international esteem and fame he had attained.

Harry K. Clench

Life History Studies

I. The Importance of Life History Investigations.

by C.L. Remington

It is generally acknowledged among American Lepidopterists that butterfly taxonomy is in a rather chaotic state. Only rather recently have the intensive studies of small groups begun to bring some order from the confusion. However, these investigations have been based primarily on genital structures of museum specimens. Comparative studies of the immature stages can be of great value in classifying butterflies. The mosquito students have found the larvae of more value than the adults in recognizing a large percentage of the species. The specialists on stoneflies, mayflies, dragonflies, caddisflies and sawflies all know the usefulness of immature stages for classification. Thus it is surprising that little use has been made of this valuable aspect in butterfly taxonomy. Few Lepidopterists have studied butterfly larvae on a comparative basis. With hardly an exception, the famous work of Edwards, Scudder, and other old-timers, as well as that of such careful present workers as Comstock, Dammers, and Dethier has been largely descriptive in nature, with comparison of species and keys to larvae and pupae absent or only casually included.

There are many American amateur Lepidopterists who are interested not only in assembling collections, but who also wish to contribute to the advancement of the knowledge of butterflies and moths by doing original work and publishing the results. They are seriously hampered in taxonomic research by a lack of necessary literature and the huge reference collections found only in museums. However, these non-professional workers have a line of equally important research right at hand, which does not require an extensive library or high-priced equipment. This line is life history studies. There is a surprisingly large number of American butterflies and moths of which not even one host plant is known. Among others I might mention Hemiargus (Echinargus) isola and Strymon cecrops, which are common species. In scores of other species the favorite host plants in New England or California have been determined, but in large areas of the range of the butterflies these plants do not even occur, and the favored host remains unknown in those areas.

It is also important to preserve carefully a good series of all the instars of larvae as well as eggs and chrysalids of all species of Lepidoptera from numerous regions, so that an exact classification may be formulated eventually, based where possible on structural characters rather than coloration and markings. This will make attainable two great aids to Lepidopterology: 1) the preparation of keys which will allow identification of any butterfly larva or pupa, without rearing it to maturity; 2) the accumulation of a thorough knowledge of immature stages so that larvae and pupae may be used to supplement adult characters in evolving a phylogenetic (natural) classification and studying geographic variation.

It will probably be possible to carry on crosses of forms whose status as species or subspecies is uncertain. If sterility results, the forms are certainly distinct species. If offspring are obtained their characteristics and degree of fertility will be of great interest. Much of the advanced insect study of the future will be based on the results of crosses.

Succeeding articles in this series will deal with specific subjects.

COLLECTING TRIPS

The old collecting fever is now rising in all of us avid Lepidoptera hunters. The southern members must be well launched with their spring collecting as this first issue comes out. Harold O'Byrne writes from Missouri that Erynnis brizo, Psychomorpha epimenis, Anthocaris genutia, etc. are now flying and that the season is about three weeks later than usual. The Massachusetts season is apparently equally late. Lycaenopsis pseudargiolus and Pieris rapae started things off here a few days ago, in spite of sudden, brief snow flurries.

Many members are planning tantalizing trips for the coming season. Drop us a card with your plans and let your fellow Lepidopterists start advance bidding for expected duplicates. Here are the ones we know about thus far.-

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First, a completed trip:- Dan Starrett, of Principia College, has been going over the catch made on the island of Haiti during a Christmas holiday jaunt.

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Carroll Wood of Harvard will scour the Atlantic Coastal Plain and a good bit of Cuba, primarily for botanical specimens for his doctor's thesis, but butterflies will also be an object of his attention. Another Lep. Soc. member, I.D. Clement, will be botanizing with Wood.

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C.L. Remington of Harvard and his wife, Joanne, will be on all- summer automobile collecting trip, also primarily to collect specimens (Thysanura) for his doctor's thesis. They plan extensive Lepidoptera collecting, particularly of immature stages and of Basilarchias. P.S. Remington will probably join the expedition as it swings through Missouri, Oklahoma, Texas, and Colorado. Other states covered will be most of the Far West, and Montana, Wyoming, South Dakota, Minnesota, Illinois, and then back to Cambridge. Other Lep. Soc. members who definitely will be seen are Don Eff, Dr. J.A. Comstock and Lloyd Martin, and J.C. Hopfinger.

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Dr. A.E. Brower, of Bar Harbor, Maine, was visiting Cambridge when the last of the manuscript of the first issue of the NEWS was being completed, and both the co-editors enjoyed entertaining him. He is studying types of Microlepidoptera in the Museum of Comparative Zoology. As many of you know, he is the foremost authority on the genus Catocala and has promised some valuable material for the NEWS for enthusiasts of that genus.

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Al Lauck, of Alton, Illinois, reports success in getting a new car at last. He is celebrating by preparing for a collecting trip to the Teton Mountains and other choice collecting spots in Wyoming, as well as a visit to his old standby--Rocky Mt. National Park.

We wish to give grateful recognition to the authorities of the Biological Laboratories of Harvard University, who have kindly made available the mimeographing facilities of the Laboratories at no cost to the Society.

NOTICES BY MEMBERS

Members are invited to contribute to this page any special requests. There will be no cost for inserting notices. Unless withdrawn sooner by the contributor, each notice will be carried for three consecutive numbers. If the notice is to be continued, the contributor must again submit it, with new wording. Please try to make the wording interesting, to improve the chances of its success. There will be no limit set on length of notices, but overly verbose ones may be rewritten to economize on space. Your needs have an excellent chance of being met through this column, so submit your notice now.

LEPIDOPTERA FROM NOVA SCOTIA of any group offered in exchange for North American Satyridae, Catocala, Arctiidae(esp. Eubaphe), and Geometridae (esp. the Plagodis-Metarranthis group and Caripeta and Semiothisa). Douglas C.Ferguson,Box 617 Armdale P.O.,Halifax,Nova Scotia.

Butterflies of genus INCISALIA desired for examination, exchange, or purchase, from ALL PARTS OF NORTH AMERICA, for taxonomic revision now in preparation. Harry K. Clench,48 Avon Hill St., Cambridge 40, Mass.

CASCADE MTS. LEPIDOPTERA offered in exchange for species from other parts of North America. J.C. Hopfinger, Brewster, Washington.

WANTED- North American SPHINGIDAE AND CATOCALA. C.W. Baker, Waynesburg, Ohio.

SPHINGIDAE, ESPECIALLY SPHINX (Hyloicus) desired. Will collect in any family of Lepidoptera in exchange. Wm. E. Sieker, 119 Monona Ave., Madison, Wis.

You are invited to place your name in the Scientists' Directory. Names classified and listed by groups and covering all lines of nature and science, amateur and professional. No charge for listing. SCIENTISTS' DIRECTORY, Box 1344, Hartford 1, Connecticut.

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IF YOU BUY, SELL, OR DETERMINE MATERIAL SENT TO YOU FOR DETERMINATION, put your name in the SERVICE DIRECTORY. This covers specimens, equipment, and supplies for nature lovers and scientists. Box 1344, Hartford 1, Conn.

Specializing in systematics and life histories of North American GEOMETROIDEA. Would like to exchange and buy specimens in this group. Frederick H. Rindge, 437 Ocean View Ave., Berkeley 7, California.

If you have for exchange or sale North American CATOCALA or SPHINGIDAE from the Americas (N.& S.) and Antilles, write: Mrs. C. Reed Cary, Ellet Lane & Wissahickon Ave., Mt. Airy, Philadelphia 19, Pa.

As mentioned in the comments on Leighton's paper on page 5, we have begun arrangements for a cooperative board of specialists who will check identifications of adult butterflies and moths for Society members who are preparing faunal checklists or other published papers for which accurate identifications are essential. A detailed announcement of this service will be presented in the June issue of the NEWS.

Please PRESERVE YOUR COPIES OF THE NEWS! There will probably be a demand for back numbers in the future, and only a very limited number were run off.

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The term, "Charter Member", will be applicable to anyone who joins the Society during 1947. We believe that you will have reason to be proud of Charter Membership in years to come.

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The greatest need of The Lepidopterists' Society at present is an increased membership list. Our principal sources of names of Lepidopterists have been: 1) The Naturalists' Directory; 2) the membership list of The Entomological Society of America; 3) our personal address files; and 4) names sent in by you with your membership slips. The last has been one of our most productive, and we urge you to send in suggestions of any Lepidopterists known to you who are not in 1), above. You can also be of help in prodding your correspondents who have already received our notice, but have not yet enrolled. The membership price is so low that there should be no reason for anyone sharing the copy of a member in the name of economy. Send in names on a penny postcard.

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For the sake of convenience in filing the NEWS, the pagination will be continuous in each volume. When Number 2 arrives, with the first page numbered "-13-", don't be suspicious of carelessness on the part of your postman.

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Be sure to drop us a postcard with your change of address if you move. The NEWS is mailed Second Class and cannot be forwarded to you until you actually inform us of your new address.

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No advance dues (beyond 1947) are being accepted. Since the 1948 NEWS will have 12 issues, instead of the 8 for 1947, the dues will go up somewhat, but the amount will not be determined until late 1947. Don't worry, we'll be tapping you on the shoulder and displaying the bare palm when the time comes.

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THE LEPIDOPTERISTS' NEWS is the monthly newsletter of The Lepidopterists' Society. Membership in the Society is open to anyone interested in the study of butterflies and moths. The dues are $1.00 per year, and the NEWS is sent to all members. Please make checks and money orders payable to: Charles L. Remington, Treas. Address all communications to P.O. Box 104, Cambridge 38, Massachusetts.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P. O. Box 104, Cambridge 38, Massachusetts
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Edited by C. L. REMINGTON and H. K. CLENCH

Vol. I, No. 2 June, 1947

SMITHSONIAN INSTITUTION
JUL 14 1947
NATIONAL MUSEUM

We are pleased to present in this, the second issue of the NEWS, the plan for the Board of Specialists:

CONDITIONS GOVERNING IDENTIFICATION OF SPECIMENS.

1. The purpose of the Board of Specialists is to strive toward a high standard of accuracy in published papers on American Lepidoptera by providing authoritative identifications of specimens forming the basis of these published papers. This service shall be advertised prominently by THE LEPIDOPTERISTS' NEWS.

2. The service is specifically available to members of The Lepidopterists' Society.

3. While the members of the Board of Specialists agree to identify all specimens concerned with studies and observations to be published, other specimens may or may not be accepted for identification. Acceptance of these is entirely at the choice of each specialist, and must be determined in advance by correspondence with him.

4. Adherence to the following rules is required in order for specimens to be accepted by specialists:
   - A. No specimens may be sent until the specialist has replied in writing that he is ready to receive them.
   - B. No specimens will be accepted unless full data are included on each specimen, that is, locality and date of capture or emergence. Collector's name, elevation and brief ecological data are strongly requested. Key numbers are not acceptable substitutes for full data.
   - C. Specimens must be spread, mounted on pins. In case of faunistic studies it may be permissible to have a small series of several pairs mounted and the remainder sent in papers, particularly in such groups as the Lycaenidae and some of the Nymphalidae.
   - D. Wherever possible, at least three pairs of specimens of each species should be sent for determination. In some genera it is almost impossible to determine a species from one specimen.
   - E. It is assumed that the specialist may, if he chooses, retain one-half of the first eight specimens of each species, but uniques will not be retained unless by agreement.
   - F. The member sending specimens for identification should note the amount of postage required to send the specimens and in his covering letter enclose an equal amount for return postage.
   - G. Specimens must be carefully packed to insure against breakage in shipment. Of course, all breakage is the responsibility of the member receiving identifications.

We were stirred to attempt the organization of this cooperative project of the Lepidoptera specialists in America by the obvious interest in faunal checklists, host plant and life history studies, and general habit notes, as evidenced by numerous published papers on these phases to be found in American entomological literature during the past many years. Perhaps of equal importance in our decision to organize the Board is the really large number of faulty identifications of species reported in these papers. We hope the interest in published work of the mentioned kind will become increasingly active and productive, and we expect that the Society will provide for dependability of identifications by means of the service here outlined.

With authoritative identifications readily attainable by all members we believe that there will no longer be an excuse for errors which have been so numerous in the past. Should further careless papers appear we shall vigorously criticize them with whatever influence can be exerted by the NEWS. Certainly it is a credit to the author of a faunal list representing diligent labor to consult authorities for help in matters beyond his own knowledge, and attaches no stigma on the worker's ability to do independent research.

Correspondence on arrangements with some specialists is still incomplete at the present time, and eventually we expect to have some kind of arrangements for every group of North American Lepidoptera, as well as many exotic groups. The following well-known authorities already are members of the Board of Specialists.-

NORTH AMERICA

Satyridae.....Mr. CYRIL F. DOS PASSOS
Washington Corners, Mendham, N.J.

Oeneis("Argynnis")& Boloria("Brenthis").....Mr. L. PAUL GREY
Lincoln, Maine

Theclinae (Hairstreaks & allies).....Mr. HARRY K. CLENCH
48 Avon Hill St., Cambridge 40, Mass.

Plebejinae (Blues).....Mr. V. NABOKOV
Museum of Comp. Zoology, Cambridge 38, Mass.

Hesperiidae.....Dr. A.W. LINDSEY
Denison Univ., Granville, Ohio

Catocalinae & Aegeriidae.....Dr. A.E. BROWER
5 Hospital St., Augusta, Me.

EUROPE

All Rhopalocera.....Mr. V. NABOKOV

SOUTH & CENTRAL AMERICA & W. INDIES

Hesperiidae..... Mr. ERNEST L. BELL
150-17 Roosevelt Ave., Flushing L.I., N.Y.

SMITHSONIAN INSTITUTION
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2. The North American Clear-wing Moths of the Family Aegeriidae

by George P. Englehardt*

The new revision of this exceptionally interesting family is the product of the late author's intensive study for over 40 years. Unfortunately the manuscript was not quite complete at the time of his death and was finished by Englehardt's close friend and collaborator, the late August Busck. The work is a thorough treatment of the 26 genera, containing 121 species and 50 other forms which Englehardt recognized as present in North America. The 26 genera are assembled into 9 groups, based primarily on the male genitalia. A key to all of the genera, mainly using characters of the venation, legs, and mouthparts, will be a great aid in identification. Keys to species are also given, but unfortunately there are no keys for species of: Carmenta, Ramosia Thamnosphecia, Zenodoxus, Synanthedon, Pentstemonia, and Conopia, each of which has several species.

The plates are excellent. Sixteen are colored, and sixteen are black-and-white. The beautiful colored plates, executed by Mrs. Beutenmuller and Mrs. Benson, illustrate 76 species and subspecies. The uncolored figures show both the male and female genitalia of 23 additional species and subspecies. Thus only 41 species and 31 subspecies are not illustrated at all. The venation of every genus except Palmia is figured.

The 7 genera described as new are: Cissuvora, Signaphora, Vitacea, Pentstemonia, Hymenoclea, Sylvora (including the common maple borer formerly known as Synanthedon acerni), and Ramosia. The new species and subspecies are: Pentstemonia hennei(Cal.), P. clarkei(Ore.), P. dammersi(Cal.), P. brevifolia(Cal.), Ramosia chrysidipennis race wallowa(Ore.), Carmenta pyralidiformis var. aurantis(Ala.), C. helenis(Sask.), C. phoradendri(Tex.), C. apache(Ariz.), C. tarrancia (N. Mex.), C. austini(Tex.), C. giliae race woodgatei(N.Mex.), C. ogalala (Colo.), C. suffusata(Okla.), Sylvora acerni race buscki(Fla.), Conopia richardsi(Ga.), Alcathoe caudata race annettella(Ohio), A. pepsioides race ferrugata(Colo.), A. autumnalis(Tex.), A. verrugo var. corvinus(Cal.), Thamnosphecia alleri(Ala.), Cissuvora ampelopsis(Tex.), Paranthrene tricincta form oslari(Colo.), P. dollii form fasciventris (Ill.), P. robiniae form palescens(Cal.), Vitacea polistiformis form huron(Mich.), Albuna fraxini male form vitriosa, Euhagena nebraskae forms mormonia(Utah) and intensa(Cal.), E. hirsuta(Tex.), Aegeria tibialis var. melanoformis(N.Y.), Melitta grandis var. hermosa(Ariz.), Zenodoxus wissadulae(Tex.), Z. sidalceae(Wash.), Z. palmii races sphaeralceae(Wash.) and incanae(Ariz.), Z. canescens races sidae(Cal.), and bexari(Tex.), and Z. rubens(Tex.).

Perhaps the best indicator of the thoroughness of Englehardt's study of the Aegeriidae is the remarkably complete information on host plants, summarized in a convenient Food-plant Index at the end of the paper. This index gives both Latin and common names. A large proportion of the host records were made or verified personally by Englehardt.

C.L.Remington

*Available for $ .75 from "Supt. of Documents, U.S. Gov't Printing Office, Washington 25, D.C.". Anyone interested in North American moths should write for it immediately. The dealer's price will be very much higher.

RECENT PAPERS ON LEPIDOPTERA

Under this heading will be listed each month papers on Lepidoptera which have appeared in American and foreign journals, and which are of particular interest to American Lepidopterists. In most cases notes will be very brief, but new names and changes in synonymy will always be given, and in some cases detailed comment will be presented on important points.

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15. Benander, Per "Microlepidoptera Sueciae." (in Swedish) Opuscula Entomologica (Lund,Sweden),band 11:pp.1-82. Apr.24,1946. This is mainly a checklist, giving distribution, in counties in Sweden, and in other Scandinavian countries. Records 1402 species.

16. Sylven, Edvard "Makro-och mikrolepidoptera från Åsele lappmark." Opuscula Entomologica,band 10:pp.43-53. May 31,1945.(Swedish) Records Lepidoptera taken in Lappland, with catalogue of Lapp Lepidoptera, including names of Holarctic butterflies familiar to American collectors: Brenthis frigga, aphirape, selene, euphrosyne (all listed by Sylven as genus Clossiana), Oeneis norna, Pieris napi, Colias palaeno, Hesperia centaureae, and others.

17. Tilden,J.W. "An Occurrence of the Pupa of Glaucopsyche lygdamus behrii(Edwards) in an Ant Nest." Pan-Pacific Entomologist, vol.23:pp.42-43. Jan.,1947. Records a pupa taken in an ant nest "surrounded by ant pupae"! Adds that the pupa "either must have been transported to the ant nest as a larva, or allowed to enter it unmolested." Unfortunately the ants were not collected and submitted to a specialist for identification. This is the first published record known to the reviewer of a lycaenid larva actually occurring in an ant nest, in North America. Many of the members may be unaware of the relationship of the larvae of the blues, coppers, and hairstreaks, with ants. These larvae all secrete a sweet honeydew very attractive to ants, and the ants tend them carefully, protecting, grooming, and even moving them to better food, in exchange for the sweet secretion. Some species even carry the larva down into the ant nest, where it feeds for its last two or three instars on nothing but ant larvae, then pupates in the ant nest, and when it emerges does not expand its wings until it has crawled out of the ant nest! L. behrii may have this same habit. During field work this summer all members are urged to watch carefully for Lycaenidae larvae (usually feeding on buds, flowers, or seeds), and if possible to collect the ants which tend them. A careful study of the ant-larva relationship of any species would be of much more value than a paper naming half a dozen uncorrelated "new" races, varieties, or seasonal forms.

18. Verity, Roger "Le Farfalle diurne d'Italia." Vol.1(1940), vol.2 ('43). 537 pp., 28 pl.(19 col.) quarto. Casa Editrice Marzocco, S.A., Florence. We have not seen this work on Italian butterflies by one of the greatest Lepidopterists, but wish to call it to the attention of readers of the NEWS. Only 1,000 copies of each volume were printed. The two volumes are listed by Sherman at $22. The date of issuance of Vol. 3 is not known. In reviewing it, Francis Hemming, British nomenclaturist, calls it "the most exciting event in the literature of lepidopterology that has happened for many years." (V. Nabokov comments that nothing else exciting has happened in Lepidoptera literature for many years!) This is undoubtedly one of the finest works on the Rhopalocera ever produced for one relatively small region, and would be most useful to anyone studying Palearctic butterflies.

C.L.R.

2. Samuel Hubbard Scudder (1837-1911)

The position of Scudder as the strongest support in the structure of American Lepidopterology makes it appropriate for the NEWS to devote an extra page to this biographical sketch. His life, his work, and its impact all are big in importance and extent, and even a doubling of the usual space allotted to NEWS biographies can give only an eddying breeze of the moving force of this man's contributions.

It seems to be a characteristic failing of biographers that the sorrows of a man's life are accentuated. We shall stress the reasons why Scudder must have enjoyed his life thoroughly and why he must have looked back on his accomplishments with satisfaction. Scudder's personal life had sad times. His young wife passed away when their only son, Gardner, was a small boy. Gardner, after graduating from Harvard College and receiving his M.D. at Harvard Medical School, was fatally stricken by disease. Scudder's elder brother, a missionary, was drowned in India shortly after his arrival there. And Scudder, himself, was the victim in his later life of what he knew was a fatal malady. Nevertheless it was apparent from his youth onward that Scudder was to be a great scientist, and as such, was always much more concerned with his zeal for natural science than with his personal life. On this basis, we believe he was a happy, satisfied man.

Samuel Hubbard Scudder was born in Boston April 13, 1837. He received his secondary education at the Boston Latin School, where hungry young scholars were and are richly nourished. He graduated from Williams College in 1857, a decade later than his future friend and fellow Lepidopterist, William Henry Edwards. Scudder was already demonstrating his biological ability during his college days, and on his graduation he was attracted to Harvard to study with the great Louis Agassiz, then in his prime. Scudder enjoyed telling how Agassiz prepared him for entomology. He was given the assignment of detailed study of a group of fishes, on which a monograph was written, but never published. Scudder studied with Agassiz from 1857 to 1862, when he received the degree, Bachelor of Science, from the Lawrence Scientific School of Harvard. He was then appointed as Agassiz's assistant, from which post he resigned in 1864 to become curator of the Boston Society of Natural History. He later served as Assistant Librarian of Harvard University, as President of the Boston Society, and finally as Paleontologist of the U.S. Geological Survey, working on the Tertiary fossil insects. He left the last post in 1892 to retire to full-time work with insects in his large study-museum built in the yard of his Cambridge home.

Scudder had a keen awareness of the scientific needs of his day, and actively campaigned to meet them. His great Nomenclator Zoologicus (1884) is still the one guide for zoologists of all generic names given to animals up to the time of its publication. His Catalogue of Scientific Serials (1871) set the precedent for the constantly consulted Guide now in use. He was a founder and editor of the Cambridge Entomological Club and its journal, Psyche. He was the leading organizer of the great Appalachian Mountain Club. He founded the illustrious Boston Naturalists' Club with E.S. Morse. He put Paleoentomology on its feet with his Classed and Annotated Bibliography of Fossil Insects (1890) and his Index to the Known Fossil Insects of the World (1891). He served as editor of Science for two years. His other pioneering work is far too extensived to be mentioned here, but James A.G. Rehn, noted Orthopterist, wrote: "His work on the Orthoptera may be summed up by saying that it

was the basis on which the present classification of North American Orthoptera was developed." "He was the greatest Orthopterist America has produced."

Scudder did not work on moths, but he is undoubtedly the greatest butterfly student America has produced. Much of the framework of our generic classification is Scudder's work. With Burgess, he pioneered the study of the genitalia of butterflies. His writings were always scholarly and interesting. His greatest work on Lepidoptera is his Butterflies of the Eastern United States and Canada, in three volumes, published by the author in Cambridge, 1889. The volumes, giving systematic study of all the eastern species, are generously flavored with essays on many important aspects of butterfly science. Under each species are given detailed descriptions of adults and immature stages, distribution,host plants,habits,and known parasites. He included the important mention of "Desiderata", or unknown aspects, under each species. He published approximately a hundred other books and papers on butterflies.

Although a number of American species of butterflies immortalize Scudder by being named by or for him, his greatest contributions are in his generic classification, especially in the Lycaenidae and Hesperiidae. Names such as Euphydryas, Anthanassa, Basilarchia, Mitoura, Incisalia, Erora, Brephidium, Philotes, Glaucopsyche, Thorybes, Pholisora, Oarisma, Ochlodes, Polites, Poanes, Atrytone, Amblyscirtes, Lerodea, and Megathymus are Scudder's.

Perhaps the best way to show the spirit, enthusiasm, and keen observation of Scudder is to quote a few lines from his great three volume work discussed above. Writing on Erora laeta, rarest of eastern butterflies, he relates (p. 822): "On my last collecting tour in the Graylock Hopper at Williamstown, Mass., where I first began my chase for butterflies more than thirty years ago, musing over the butterflies whose early stages were unknown, my thoughts turned to the present species, and recalling thereby the lines I had already placed at its head in this work, I repeated them aloud, almost unconsciously. (Ed.- "How would, I say, mine eyes be blessed made By looking on thee in the living day." Shakespeare.-Sonnet). I had not gone half a dozen steps before I came to a damp spot in the road, where laeta alighted at my feet. Although it was the first time I had seen this charming object alive, I instantly recognized it; in another second my net was over it and I shouted triumphantly:-

> How have, I say, mine eyes been blessed made
> By looking on thee in the living day. "

Concerning the origin of the word "butterfly", he wrote in one of his essays (p.787): "Mr. Frederick Clarkson....thinks there is good reason to believe that the root-meaning of the word 'dates back to early Egyptian history, and as a hieroglyphic it is synonymous as representing the qualities of completeness and perfection which characterize the soul.' All of which I in my ignorance judge to be humbug. One distrusts much of the reasoning drawn from hieroglyphs, for it would seem in general that almost any meaning can be drawn from them by dilettanteism if only sufficient ingenuity is put in. ... the common notion, which seems to me, as I think it must to all entomologists, to be unquestionably the correct one, is that the word is simply an expressive name given to the commonest form of butterfly that is found in Europe, where the name arose, namely, the butterflies of the genus Eurymus, which are ordinarily of much the same kind of yellow that one finds on the buttercup, whence the name of both."

Charles L.Remington

Methods for Collecting Underwing Moths (Catocala).

Auburn E. Brower, Ph.D.
Augusta, Maine

Catocalae- the prizes of many a collecting trip - are found from the Arctic Circle to Guatemala. Few localities are without a number of species. Many species are so rare that no complete collection exists. The early stages of many are utterly unknown. Little or nothing has been recorded of the habits of many of our species. Through years of effort the author has accumulated numerous unpublished bits of information, which serve to emphasize the remarkable lack of knowledge concerning this popular group. Different species of Catocala have different habits. The little known special habits of some groups account in part for their rarity in collections. Carefully recording these differences in habits, especially between closely related species, is highly important.

Catocalae are secured by all of the important methods of moth collecting: taking resting moths by day, securing them at bait on tree trunks at night, at light, at flowers, and by rearing. The successful collector must use several methods because of differences in habits. They are often local and must be sought in favored areas. They generally rest by day on trunks of large trees. They prefer mature stands with little underbrush, but situations varying from trees on brushy ridges or knolls to street trees in cities give big catches, or from the huge cypresses of southern swamps to the oak-belt on the western mountains. One large group prefers rustic buildings, porches, verandas, caves, cliffs, overhanging ledges and other semi-concealed locations. Weather conditions greatly influence their habits. Brushing with a leafy branch helps in locating their resting places.

Collecting at bait is one of the most important methods of securing species of Catocala, though daylight collecting may yield larger numbers of specimens. Bait is often highly productive when other methods fail, and adults of some species are rarely taken by any other method; furthermore, bait attracts a far larger percentage of females, which can be caged for eggs. Many bait formulas have been recommended. The successful collector must determine the best for his locality. Mixtures of fermenting fruit pulp and a sweet, usually with an odoriferous attractant added, constitute most baits. Apples, peaches, rotting bananas and many other fruits have been used as a base, with Blackstrap molasses or other sweet added to ferment actively, to which vinegar, stale beer, rum, ethyl alcohol, banana oil or other odoriferous material is added, often just before application. A thick sticky base with active fermentation going on is desirable, so baits are generally started 2-3 days ahead of use and kept in the sun or a warm place. Applied night after night the bait accumulates and increases in attractiveness. Some of the formulas recommended are: stale beer and fermenting fruit or sweet; apple cider or vinegar and brown sugar or molasses; and fermenting fruit pulp with Blackstrap molasses, honey, or other sweet. Bait is usually put on with a large brush. A bait line along a road or wide trail through large hardwood trees with relatively little underbrush is best. Cold nights at high altitudes or late in the season cause Catocalae to visit bait by day. Nearby trees may differ greatly in their attractiveness when baited. Bait for Crataegus-feeders and other groups must be applied in the local habitats of the moths. Bait may be applied to fence posts when trees are lacking, or strips of cloth may be soaked in the bait and

hung up. The two hours following dusk are best. Night collecting at lights generally gives the collector poor returns.

Catocalae are easily rubbed, the thorax losing its scales, after which they are termed "scalped" by the old Catocala hunters. A net should not be used for cabinet specimens, though perfect specimens can be taken when it is possible to clap the open net containing the insect to the ground, holding the bag up until a cyanide jar can be inserted. Catching them directly into a large-mouthed cyanide jar is the only successful method. Jars should be brought up at an angle from below as the moths drop downward when they take flight. Approach directly at night, holding the light steady, but by day careful stalking and leaning around the trees is often necessary. Studiously avoid snapping twigs or casting a shadow over the insect. When the moth is caught it will flutter violently and must be watched and the jar turned to keep it off of its back. When stupefied the moth is poured out, females may be kept alive for eggs, and those for specimens pinned into a killing box or papered and put back into a cyanide jar for an hour, after which they are packed in a stout box. The author uses four large strong cyanide jars; two are used alternately to catch the Catocalae on trees and the other two for the papered specimens. Immediately on reaching home papered material should be turned out of the papers and put into a relaxer.

Collecting Catocala larvae offers the best means of securing some species and a good method for many others. Count back from the time the moths fly for 20-30 days for the beginning of the pupal period, then preceding that for some 60 days the larvae are to be found. Catocalae feed on willow, poplar, cottonwood, hickory, pecan, walnut, oaks, Crataegus, crabapple, cherry, plum, honey locust, false indigo, several Myrica, and basswood. Larvae rest on or near the food plant by day, feeding at night, except a few day-feeders. They rest along stems, in fissures in the bark, in leaves and debris or other hiding places. Collectors provide hiding places in the form of bands of burlap, tow, old rags, crumpled paper or other material. Bands need to be weathered or wet down. Catocala larvae may be separated from all but a few related genera by the conspicuous purplish or blackish spots in the middle of the belly on most segments, protective color, and elongate tapering form flattened ventrally. Larvae must have fresh food and clean containers. Parasites are rarely secured and should be saved with full data. The pupae are formed in hiding places or debris in a thin cocoon of silk and leaves or other debris. Poplar feeding species have been very successfully collected as pupae in the leaves and grass near the base of the trees.

Female Catocalae kept alive for egg laying are usually enclosed in paper bags, boxes, or jars with scaly bark or pleated cloth to receive the eggs. They must be kept cool and away from rodents. Screen cages through which air can flow, have been recommended.

The egg-stage overwinters, usually in bark crevices of the food plant, some covered with a protective coating. The disk-like slate-colored eggs of the hickory-feeders are tucked between bark-scales in clusters. Others are found hidden in the bark. Information is greatly desired regarding the eggs in nature.

PLEASE NOTIFY THE NEWS OF CHANGES OF ADDRESS IMMEDIATELY

MISCELLANY

A United Press dispatch in a local newspaper carried an interesting story a few weeks ago. Over a thousand irreplaceable butterflies (presumably types) disappeared from the Melbourne, Australia, Museum and various Australian and New Zealand collections. For over a year Scotland Yard agents searched Australia, North America, and Europe, and at last found the missing specimens in a collection (not named) in Surrey, England. We presume that the acquisitive zeal of one Lepidopterist is causing him great embarrassment, and we suspect that visiting Lepidopterists at the Melbourne Museum are regarded with a somewhat jaundiced eye.

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G. Shirley Brooks, of Winnipeg, Manitoba, the well-known Churchill collector, although over 75 years old now, is hoping to make another trip up to Hudson's Bay this summer. He sent us a copy of his checklist of the butterflies of Manitoba, published in Canadian Entomologist five years ago, and we expect to comment on it in a later issue when we discuss regional checklists, of which his is one of the best. I'm sure many other Canadian Lepidopterists share his regret at having Dr. McDunnough leave the Dominion.

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"The Collection and Preservation of Insects" by P.W. Oman and R. A. Cushman has been issued recently as Misc. Publ. of the U.S. Dept. Agr. No. 601 (42 pp.), and is available for 15¢ from: Superintendent of Documents, U.S. Gov't Printing Office, Washington 25, D.C. It contains much information of value to Lepidopterists, and is a handy addition to the book shelf.

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How many of you noticed the - not quite perfect - specimen of Danaus plexippus adorning the hat of Sitting Bull in Life, 28 April 1947, at the top of page 67?

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"For the relaxing box it is suggested that entomologists try vermiculite, a new substance used by gardeners and greenhouse men for mulching and soil protective purposes. It is said to be retentive of moisture, non-decaying and sterile." Ralph Beebe, Michigan.

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John L. Beal, of Gastonia, N. Car., is looking for a permanent remedy for Dermestes in his Riker Mounts. Can any of our readers help him out?

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Any Lepidopterist visiting the Art Museum in Boston would be well-repaid in looking up a painting entitled "A Vase of Flowers", by Jan van Huysum (1682-1749). A careful inspection will show, in addition to the well-depicted flowers, not only a number of beetles, flies, and even a wasp, but also: Lycaena phlaeas, Pieris rapae, Coenonympha pamphilus. All are done with almost fanatical accuracy, even down to the white annulations on the antennae of phlaeas (a close relative of the North American hypophlaeas).

H.K.C.

LOCAL COLLECTING AND PLANNED COLLECTING TRIPS

By now even the delayed season hasn't stopped the collecting, and those new net bags have been slipped onto the old frames and already have been responsible for many nice captures from Canada down to tropical Pharr, Texas, where Avery Freeman has been noticing the gradual changes in the populations of Strymon been from the winter to the summer forms. Even in southern Texas the prolonged winter has hurt the early collecting, and Freeman has looked in vain for one of the rarest gems he takes down there, Strymon azia. But from the beginning of May temperatures have been up around 100° there. Freeman offers to check skipper identifications for anyone, and to furnish collecting data on Texas butterflies to any fellow member.

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Mr. V. Nabokov, specialist in Lycaenidae, and curator of Lepidoptera at the Museum of Comparative Zoology at Harvard University, has now completed plans for a full summer's choice collecting near Long's Peak in the High Rockies of Colorado. His address will be: Columbine Lodge, Estes Park, Colo.

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F.R. Arnhold, of Chippewa Falls, Wisc., has planted the food plants of several species of Catocala which he wants to rear. Although thwarted by parasites (please save them!) and disease for the past two years, he expects to succeed this time.

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During the latter part of July Dr. J.A.Comstock and Lloyd Martin will be in Southern Arizona on a collecting trip. Dr. Comstock will stay about two weeks, and Lloyd expects to remain for a month. Mr. Martin very kindly rounded up a list of Southern California Lepidopterists for our address list.

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Jim Creelman, of San Diego, reports a new record catch for San Diego County, and we expect to hear more about it when he gets more species identified. He mentions several friends who are waiting to join the Society until they see a copy of the NEWS. We haven't heard anything further from that region.

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Will Johnston has been taking some of the choicer New England butterflies with his father, Professor I.M. Johnston, of Harvard. They have been keeping detailed records of collecting at the Arnold Arboretum for successive seasons, and report Incisalia augustus right on schedule in spite of the delayed spring. I. niphon and Hesperia metea have been found more recently, and they expect to have Atrytonopsis hianna and Mitoura damon, among others, by the time this NEWS is in the mail.

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P.S. Remington, on his annual spring collecting trip to Cedar Hill on the edge of the Ozarks, reports the capture of two fresh Phyciodes gorgone, a very rare prize for the St. Louis collectors. He reported Atrytonopsis hianna in good numbers as usual, but no Hesperia metea this year.

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T.N. Freeman, Systematic Entomologist of the Canadian Division of Entomology, will be spending the short summer at Baker Lake, Northwest Territories, 500 miles north of Churchill on Hudson's Bay. He expects to have some notes of interest concerning his findings on the great northern tundra.

C.L.R.

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NOTICES BY MEMBERS

Wanted- All species of the hesperioid genus Megathymus for exchange or purchase. Many rare Lepidoptera offered in exchange. P.S.Remington, 5570 Etzel Avenue, St. Louis 12, Missouri.

Pupae and larvae of Arctiidae, especially Apantesis, needed for systematic studies. Marion E. Smith, Fernald Hall, Amherst, Mass.

Wanted- Samples of the following genera of Satyridae, found in North and South America: Argyrophorus, Cheimas, Cosmosatyrus, Cyllopsis, Daedalma, Drucina, Elina, Eretris, Faunula, Idioneura, Manerebia, Neomaeas, Neosatyrus, Panarche, Polymastus, Proboscis, Pseudomaniola, Pseudosteroma, Sabatoga, Sinarista, Steromnia, Tetraphlebia, Thiomcia, or Zabirnia. Have some 5000 duplicates representing perhaps 500 species or varieties of Lepidoptera from all over the world to offer in exchange. Arthur H. Hoeck, 301 East Armour Avenue, Milwaukee 7, Wisconsin.

EREBIA, OENEIS, & BRENTHIS, ETC. from Arctic Canada for sale at reasonable prices. R.J. Fitch, Rivercourse P.O., via Lloydminster, Sask.

Catocalas and their eggs and larvae wanted (also various other Lepidoptera). Can offer many Lepidoptera and some rare material in other orders. A.E. Brower, 5 Hospital Street, Augusta, Maine.

LYCAENIDAE & PIERIDAE from all parts of North America desired. I am building up my collection from scratch, and need virtually everything. Offer butterflies of all groups from Southern California. Graham Reid, 11745 Hesby Street, North Hollywood, California.

LEPIDOPTERA FROM NOVA SCOTIA of any group offered in exchange for North American Satyridae, Catocala, Arctiidae (esp. Eubaphe), and Geometridae (esp. the Plagodis-Metarranthis group and Caripeta and Semiothisa). Douglas C. Ferguson, Box 617 Armdale P.O., Halifax, Nova Scotia.

CASCADE MTS. LEPIDOPTERA offered in exchange for species from other parts of North America. J.C. Hopfinger, Brewster, Washington.

WANTED- North American SPHINGIDAE AND CATOCALA. C.W. Baker, Waynesburg, Ohio.

SPHINGIDAE, ESPECIALLY SPHINX (Hyloicus) desired. Will collect in any family of Lepidoptera in exchange. Wm. E. Sieker, 119 Monona Ave., Madison, Wis.

Specializing in systematics and life histories of North American GEOMETROIDEA. Would like to exchange and buy specimens in this group. Frederick H. Rindge, 437 Ocean View Ave., Berkeley 7, California.

If you have for exchange or sale North American CATOCALA or SPHINGIDAE from the Americas (N. & S.) and Antilles, write: Mrs. C. Reed Cary, Ellet Lane & Wissahickon Ave., Mt. Airy, Philadelphia 19, Pa.

Butterflies of genus INCISALIA desired for examination, exchange, or purchase, from ALL PARTS OF NORTH AMERICA, for taxonomic revision now in preparation. Harry K. Clench, 48 Avon Hill St., Cambridge 40, Mass.

Several letters received before and after the mailing of the May NEWS expressed concern over the indications of a heavy emphasis on Butterflies. So we did a quick count on items in the NEWS which could be tabulated exclusively to either moths or butterflies, and we came up with this total: butterflies--2 pages & 159 lines; moths--39 lines. So it looks like the comments are well-taken. We are both primarily butterfly students and probably tend to over-stress that group, although that is not our intention. As a result of this needed jogging from you, a special effort will be made to give the moths equal treatment. Of course, the "Recent Papers" section is out of our hands; we try to get everything on any Lepidoptera. The present NEWS is top-heavy with moths with Dr. Brower's fine article. You may be interested to know that a count of the first 125 members shows listed specialties as follows: all Lepidoptera--43; butterflies only 43; moths only--28; none stated--11.

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We wish to express our thanks to Mr. Howard Allgeier, Printer of the Botanical Museum, Harvard University, to whom goes the credit for the very presentable masthead of the NEWS, both in design and execution as well as for the other printing jobs he has done for us. His advice and criticism have been invaluable to two budding editors.

* * * * * * *

Mr. C.F. dos Passos has called our attention to an error in the biography of Edwards (p. 8 of the last issue). The entire collection of Edwards did not pass into Holland's hands, and subsequently to the Carnegie Museum, as is there intimated. This was true only of the butterflies, the moths actually having been sold to the British Museum. We thank Mr. dos Passos for this correction.

* * * * * *

Current statistics on The Lepidopterists' Society as the June NEWS goes "to press":

Total membership-	136	Total receipts-	$188.81
Exchanges of the NEWS-	1	Total expenditures-	130.06

Generous contributions continue to swell the total receipts and allow us to do more with the NEWS. We are grateful to the following, in addition to the eighteen recognized in the May issue, for their generosity: H.W. Eustis, L.P. Grey, J.J. Kellner, A.H. Moeck, P.H. Mueller, B. Struck, and S.C. Thompson.

* * * * * *

On pages 19 and 20 you will have found Dr. Brower's concise and entertaining article on a very big subject. Such a large number of members specifically mentioned Catocala on their membership slips that we invited Dr. Brower to prepare this article for the June NEWS, to help you out with plans for the annual Catocala campaign just beginning.

* * * * * * *

We recently established an exchange with THE COLEOPTERISTS' BULLTIN. It was startling to us that two periodicals with so many identical aims appeared almost simultaneously with no inter-communication between the respective founders. Mutual aid should be in the offing. Several Lep. Soc. members are subscribers of the COL. BULLETIN.

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THE LEPIDOPTERISTS' NEWS is the monthly newsletter of The Lepidopterists' Society. Membership in the Society is open to anyone interested in the study of butterflies and moths. The dues are $1.00 per year, and the NEWS is sent to all members. Please make checks and money orders payable to: Charles L. Remington, Treas. Address all communications to P.O. Box 104, Cambridge 38, Massachusetts.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P.O. Box 104, Cambridge 38, Massachusetts
•
Edited by C. L. REMINGTON and H. K. CLENCH

SMITHSONIAN INSTITUTION
SEP 15 1949
NATIONAL MUSEUM

Vol. I, No. 3 no. 3 July, 1947

HOST PLANT IDENTIFICATION

In addition to the Lepidoptera identifications by the Board of Specialists, outlined in the June NEWS, it will be possible to have host plants identified through the Society. The identifications will be made by Dr. I.M. Johnston, professor of plant taxonomy at Harvard University, and an enthusiastic Lepidopterist.

In order to be certain to have enough plant material collected to make possible accurate identifications, certain steps should be taken:

1) Preserve as many parts of the plant as possible. The leaves, in attachment to their stalk or twig, and the flower are essential for most species. For small herbs it is usually easy to preserve the entire plant, including roots. For trees and shrubs, a leafy branch and a flowering branch should be taken. If flowers are not present and it will not be possible to return to the same tree when it flowers, make a few notes on the bark, and the habit of the tree. The fruiting body - pods, nuts, burrs, etc. - is always helpful to the identifier. Many oaks are almost impossible to identify without mature acorns. Some herbs, such as the mustard family, have two kinds of leaves: a rosette at the base, and lateral leaves on the ascending stem. In this case both kinds of leaves should be taken.

2) Include complete data. The locality, date of collection, habitat, type of soil, and (if in mountains) altitude above sea level should accompany every plant specimen. Any further notes are useful.

3) Preserve the specimen carefully. As is universally known, the best preservation of flowers and foliage is by flattening and drying the specimen simultaneously. A Lepidopterist who will carry on extensive life history studies should purchase a standard botanical press. However, a very satisfactory specimen can be obtained using a rather large book weighted by a few bricks or other heavy weight. Newspaper is an excellent absorbent layering in which to place the plant specimen for pressing. Drying plants should be kept under warm, low humidity conditions for a week (two if thick or succulent). Of course, large fruits, such as nuts, burrs, cherries, etc., cannot be pressed, but should be dried and by key numbers carefully associated with the pressed specimen. If packed firmly, the plants may be mailed in folded newspaper, with the label carefully fastened, and the package braced against bending by strong cardboard backing on both sides.

The accurate identifications made possible by careful handling of the plants are well worth the effort required. If the Lepidopterist will have no need of the plant after obtaining the identification, it will be mounted and placed in the Harvard Herbarium. Specimens mailed to: "C.L. Remington, Biological Labs., Harvard University, Cambridge 38, Mass." will be turned over to Professor Johnston. Please do not send material before September 20th.

C.L.R.

HANDLING SPECIMENS

An excellent selection of strong, relatively inexpensive net frames of the handy folding type is usually available in any sporting goods store. These nets are sold for fishing purposes, but are transformed into fine insect nets by the exchange of the fish netting for a bag made of soft, strong netting of about 15 holes to the inch (much closer mesh for small moths). The bags may be purchased from one of the natural science supply houses or, better, may be run off on the family sewing machine.

The generally preferred killing substance is cyanide (sodium, potassium, or calcium are essentially equal in effect). A cyanide jar, with the cyanide firmly fastened in the bottom by a layer of plaster of paris, needs to have a tight-fitting cover, preferably screw-cap and provided with a rubber ring. Some other poisons have been used, but are generally inferior to cyanide. Carbon tetrachloride tends to wet specimens badly, is too volatile, and may cause stiffening. Chloroform is very volatile and must be replenished often, and specimens quickly become brittle, with frequent loss of antennae and legs. Ether is very quick, and does not stiffen, but it is so volatile and expensive that it is not satisfactory. Chloroform and ether may be used for special collecting, to quickly anaesthetize the specimen, which is then moved to a cyanide jar for actual killing.

Butterflies and larger moths may be placed in envelopes and relaxed and mounted at a later time. However, all smaller moths (wingspread 1" or less), all skippers, and most very small butterflies should be pinned while fresh, although the wings need not be mounted until a later time. Many collectors carry small pinning boxes with them and pin specimens as soon as dead.

All specimens must be cared for the day they are collected if this is at all possible. Wrinkled wings, broken antennae and legs, stiffness, and uncertain data generally result from specimens left beyond the first day. It is usually easiest to mount cabinet specimens while fresh. In some groups such as skippers it often is preferable to pin them unmounted or to dry them in envelopes, and relax and mount later.

If not to be pinned immediately, Lepidoptera should be placed in a triangular envelope with the wings folded up over the back--<u>one specimen to one envelope</u>. Glassine (transparent) envelopes should be avoided and experienced collectors are outspoken in condemning them because of the crispness of the paper, which makes breakage almost unavoidable. A soft, absorbent paper is best, and the three-cornered envelope seems to have no rival for style.

Complete data should be included on every envelope. This means locality (including exact place, <u>county</u>, and state), date of capture, altitude if in mountains, and the collector's name. Habitat notes are strongly recommended. Most collectors use a system of key numbers or letters to let them know the condition of the specimen (for example, "1+" is perfect, "1" is good, "2" is torn or rubbed, "3" is very poor). If possible, the sex should be determined while the specimen is fresh and should be marked on the envelope by the conventional signs of: ♂ = male; ♀ = female. A dating stamp, or even a complete locality rubber stamp will save a lot of time if the collecting has been good. Hasty, illegible writing on envelopes must be carefully avoided.

We will welcome special notes from members on improved techniques in handling specimens in the field.

3. The Butterfly Book

by W.J. Holland*

The appearance, in 1898, of Holland's Butterfly Book marked the end of one and the start of another epoch in the history of North American butterfly study. Previously work on the North American fauna had come largely from the pens of foreign students, professional American entomologists, or a few amateurs of independent means. The era was conspicuous for its paucity of workers. Following the publication of the Butterfly Book, however, and certainly because of it, the day of the amateur began in earnest, not only in the large increase in collectors and collections, but in the published record as well.

Holland and his Butterfly Book have both had considerable criticism pointed at them. The fact remains, nevertheless, that through the medium ofhis book Holland probably has stimulated the interest of more individuals in the study of butterflies than has any other American. So successful was it that year after year it was reissued. Finally, after more than thirty years, being completely revised and augmented both in text and plates, it was published for the last time in 1931, shortly before its author's death.

In its pages the reader learns the salient features of butterfly anatomy and biology, the elements of classification, methods of collecting and keeping a collection and the principal literature. He is also given a good account of the North American fauna as known at that time. It is interesting to note that the scheme of classification and arrangement Holland used in 1898, following practices then current, was largely abandoned in later years, but is now coming into wider use.

The plates, an outstanding, generously provided feature of the book, were considered remarkable at the time, and are well thought of even today, insofar as their clarity and fidelity are concerned. The great misfortune in them is that frequently in groups that find their greatest diagnostic features beneath (such as Argynnis (Speyeria), "Lycaena" (various blues of several genera), and the majority of skippers) most of the specimens figured show upper surfaces only, rendering identification difficult or impossible. The plates added in the revised edition have rectified this to some extent.

Though the book is still the only relatively complete guide on the North American butterfly fauna available to the average student, it is clearly inadequate. The coverage is too brief for each species, illustrations are in many cases of small value, the classification leaves much to be desired, even in the revised edition. Clearly the time is approaching for a new Butterfly Book - embodying a modern classification, fuller, more accurate text, and more practical illustrations, and making use of recent developments in the more broadly applicable biological principles of genetics, geographic distribution, and ecology.

H.K. Clench

*The Butterfly Book, Rev.Ed.(xii,424 pp.,75 colored and 2 plain plates, 198 text figs.) is published by Doubleday,Doran & Company, New York. It may be obtained new for$10.00 through most book stores, or from John D. Sherman,Jr.,132 Primrose Ave.,Mt.Vernon,New York. (The earlier edition may be bought for less than half this price, but is entirely superseded by the revised edition).

19. Beall, Geoffrey "Seasonal Variation in Sex Proportion and Wing Length in the Migrant Butterfly, Danaus plexippus L. (Lep.,Danaidae)." Transactions Royal Ent.Soc.London.,vol.97:pp.337-353. Oct.30,1946. Another of Beall's studies on butterfly migration, based on analysis of wing length of The Monarch. Tables record measurements of 1062 specimens from the N. shore of Lake Erie in fall migration, 283 from July brood near there, 105 from Louisiana in late fall, and 296 from California in late fall and winter. In Ontario, the July specimens averaged distinctly shorter wings than the fall migrants. Also, of over 30 measurable dead Monarchs washed up on the shore of Erie, they, too, averaged distinctly shorter than the average of the fall population, implying that natural selection operates against short-wingedness in migration! The southern specimens fluctuated too much from year to year for any very reasonable generalizations, but Beall believes that different breeding populations may have different wing-lengths, and thus may be identifiable in the wintering areas in Calif. and Fla. He suggests similar studies on Phlegethontius quinquemaculatus, the tobacco and tomato sphinx, a suspected powerful migrator.

20. Beirne, Bryan P. "The Seasonal Abundance of the British Lepidoptera." The Entomologist 80:pp.49-53. March,1947. A detailed analysis of the abundance of British macrolepidoptera from 1865 to 1944, based on all available published notes in the several British journals which carry a preponderance of Lepidoptera papers. A chart illustrates well the fluctuation. Among the very interesting conclusions reached from comparison of Lepidoptera abundance and weather records are: 1) Long, severe winter frosts are very good. (Birds suggested as "probably the most important natural enemies of most Lepidoptera", and are probably killed by the cold.) 2) Late spring or early fall frosts are very damaging. 3) A gradual increase in rainfall for several years is detrimental. 4) High winds for a long time may deter breeding. (They certainly do not deter Oeneis on Mt. Washington in N.H.!) Beirne writes: "Regrettably little is known of the diseases of Lepidoptera, and it is not improbable that they may be at least as important as birds in the natural control of these insects." Cycles for some species are discussed. Note- we would welcome comments from members on fluctuation observations, and their ideas on what causes them.

21. Buckell, E.R. "A List of the Lepidoptera Collected in the Shuswap Lake District of British Columbia by Dr. W.R. Buckell." Proc. Ent. Society British Columbia,vol.43:pp.11-21. Feb.4, 1947. This is a list of the species taken by Dr. Buckell in one area of B.C., with dates recorded. There are 773 species, varieties, and forms, of which 541 are macrolepidoptera (67 butterflies). The identifications were checked by Dr. J. McDunnough, E.H. Blackmore, and T.N. Freeman, and are authoritative, although many of the names will undoubtedly be corrected as a result of revisional works now in progress. E.R. Buckell wrote us that Dr. W.R. Buckell collected until he became blind at 91. Many species were reared.

22. Chermock, Ralph L. "Notes on North American Enodias (Lepidoptera)." Entomological News,vol.58:pp.29-35. February, 1947. A careful review of the three North American species. Places Enodia as a subgenus of Lethe Hübner, with Satyrodes dropped to the synonymy. Considers portlandia, creola, and eurydice as distinct species. Recognizes two geographic races of portlandia: typical from the south-

eastern states; anthedon from the Northeast, with borealis a synonym. Describes as new but does not figure "Lethe(Enodia)eurydice appalachia new subspecies", occurring in the Appalachian Mts. from W. Va. to Fla. As a result of these studies the proposed nomenclature is as follows:

Lethe (Enodia) portlandia portlandia Fabr.
portlandia anthedon Clark
creola Skinner
eurydice eurydice L.-Joh.
eurydice appalachia R.L.Cher.

We believe that Mr. Chermock has taken a very commendable step in committing himself in print against the naming of minor variants, particularly those originally named on the basis of insufficient material from too few localities, and we must applaud his relegation to the synonymy of so many varietal, aberrational, and weak subspecific names. His analysis of the geographic races of the species discussed appears to be very satisfactory, and his recognition of a new race seems to be based on careful study of extensive material from many places, and thus sound. With only a little more effort Mr.Chermock could have made this a "Synopsis of ---", instead of "Notes on ---". One plate of photographs, and careful citations referring to original descriptions and other applicable papers would have made this very valuable. Exact localities of specimens examined of the species and subspecies, other than the new one, were unfortunately omitted, so the reader can glean nothing definite about distribution of the Enodias from this paper. Nothing is said about habitats and habits, and these are critical aspects of lumping eurydice with the Enodias. Nevertheless, we feel this paper is a valuable contribution.

23. Muesebeck,C.F.W. "Two New Species of Apanteles from California." Pan-Pacific Entomologist,vol.23:pp.21-24. Jan.,1947. Describes as new Apanteles medicaginis, parasitic on Colias chrysotheme eurytheme,and Amblyteles praesens on Anacamptodes fragilaria. Amb.flaviconchae listed as a parasite of Colias from Maine to Texas, and occasionally parasitizes Plathypena scabra. These parasitic wasps are significant and interesting factors in Lepidoptera field problems, and it is particularly important for Lepidopterists to preserve carefully all parasites which they rear from butterfly and moth eggs, larvae, and pupae, labeling them according to their host.

24. Stallings,Don B. & J.R.Turner "Texas Lepidoptera (With Description of a New Subspecies)", Ent.News 58:pp.36-41. February, 1947. An addition to paper #14, reviewed in the May LEP.NEWS, giving additional Pharr records and results of Texas collecting by the authors. New U.S. records are: Papilio lycophron pallas(Brownsville), Thecla castri(Pharr), T.yojoa(Pharr), T. spurina(Pharr), Adopaeoides simplex(Davis Mts.). Described as new is "Asterocampa clyton louisa new subspecies" from Pharr, said to be the subtropical race of clyton. Description very brief, no figures. Appendix A of the International Rules of Zoological Nomenclature was ignored, since no repository for the type is stated. This is a serious and incredibly common error.

C.L.R.

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PLEASE KEEP US INFORMED OF CHANGES OF ADDRESS

3. Harrison Gray Dyar (1866-1929)

About the figure of Harrison Gray Dyar has grown a wealth of legends and stories, and far from the least of these is that of his untiring energy and zeal as an entomologist. That he must have poured heart and soul into his work is at once apparent to anyone taking even the most cursory trip through his published works. Their sheer volume alone would astound the uninitiated, but when confronted with the fact that behind his large number of printed pages there lies keen observation, accuracy of detail, genius in systematics-then it is realized that here indeed is a man of whom American entomology may be justly proud.

Dr. Dyar was born in New York City on the 14th of February, 1866, but moved, with his family, at an early age to Boston, where he received most of his schooling--first at Roxbury Latin School, and then Massachusetts Institute of Technology. From there he returned to New York, where in 1894, at Columbia University, he received his Masters degree, and a year later, his doctorate. In 1897 he entered the halls of the United States National Museum, where he was to spend the rest of his life.

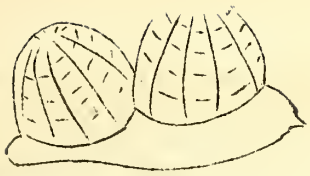
Throughout most of his professional career he was editor of one or another journal of entomology: from 1904 to 1907, the Jour. N.Y.Ent. Soc.; 1909-1912, the Proc. Ent. Soc. Washington. Finally, in 1913 he founded the journal, Insecutor Inscitiae Menstruus, which he edited and was himself the principal contributor, until the journal ceased publication in 1927. It was primarily devoted to mosquitoes, a well-known specialty of Dyar.

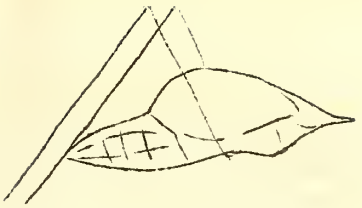
Dyar commenced publishing papers long before his formal education was finished. Indeed, in 1890 Dyar noted and published the fact that the increase in size of the chitinous parts of a larva through its successive moults proceeds at a constant ratio--this observation now bearing the title, 'Dyar's Law.' Shortly after his appointment in the National Museum, Dyar started work on the List of North American Lepidoptera, published in 1902, and still a most useful work of reference, patterned on the style of Staudinger and Rebel's European catalogue, with reference to the literature, general locality data and so forth.

To Lepidopterists Dyar is perhaps most famous for the vast quantity of life-history work he accomplished, much of it with the help of Miss Emily Morton. At the time of his death he had done more than any other American Lepidopterist in this respect. Further, he not only amassed descriptions of early stages, but put them to work, using their characters in classificatory work. He is to be thanked for much of the present order in our faunal lists.

Dyar's work was not by any means restricted to Lepidoptera. As was mentioned above, his knowledge of mosquitoes was vast, and his published work on that group of insects runs through many often-consulted pages. His principal contribution to that study is the four-volume monograph on the Mosquitoes of North and Central America, written in collaboration with Drs. Howard and Knab, and appearing through the years 1912-1917. He was also actively interested in other groups of insects, and his doctoral thesis on the Bacteria of New York City set forth ideas not then currently accepted, but which later became recognized!

Active to the very end, he turned in a manuscript on the Mosquitoes of Montana ten days before his death in Washington on January 21, 1929, just before his 63rd birthday.





II. Methods of Preservations of Eggs, Larvae, and Pupae.

by C.L. Remington

A. Eggs:

The preservation of eggs is more difficult than of other stages. The best results are obtained with special fixatives, but this is too complicated to be practical for field work. Fairly good preservation may be obtained with four parts of pure Ethyl Alcohol (Grain Alcohol) and one part water. Better results may be obtained with four parts of Ethyl Alcohol and one part Acetic Acid (glacial).

B. Larvae:

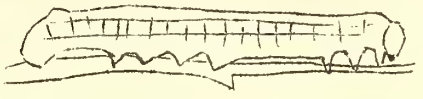
Larvae are important in life history and classification studies and it is essential that they be preserved carefully. Larvae preserved in fluid lose most of their color, but this is not a serious loss. The valuable characters for study are found in the arrangement of bristles, pits, spiracles, and other structural characters. It is true that Lepidopterists, particularly butterfly specialists, have almost universally described the colors and markings and ignored the setae. However, use of these structures will become increasingly widespread in the near future, and there is a great need for larvae preserved in fluid.

The first step in preparing a larva is to kill it by dropping it into water which has been brought to a boil and then removed from the heat source a moment before killing the larva. The larva should be left in the hot water about ½ minute if small, 1 minute if medium-sized, and 1½ minutes if large. The hot water removes fats which turn black and badly discolor the larva.

There is only one good preserving medium, and that is Ethyl Alcohol. Never use Methyl Alcohol (wood alc.), or any of the others. Formaldehyde is also undesirable. On removal from the hot water, the larva should be placed in 50% Ethyl Alcohol (1 part alc. to 1 part water). It should be left in this for about ½ hour and then placed in 80% Ethyl Alcohol. After one day it should be moved to fresh 80% Alcohol, its final preservative. 1 part Glycerine added to 99 parts of the 80% Ethyl Alcohol will help keep the specimen soft and flexible. The specimen should be kept in a tightly-corked vial. It is essential that a label be included in the vial, showing the host plant, locality, date, and collector. Labels should be written in India Ink. Otherwise they fade and become illegible.

C. Pupae:

Pupae should be preserved exactly as outlined for larvae, including the killing in hot water. If possible, the collector should wait for at least two days after pupation before killing a pupa, and should kill it before it becomes darkened by the developed imago within. If the pupa is in a cocoon, the cocoon should be slit open carefully, the pupa removed, killed, and preserved, and the cocoon kept dry with a label relating it to the pupa in alcohol. Pupae from which parasites have emerged should be mounted on an insect pin, unless they were still soft at the time of emergence.



A BARGAIN IN LITERATURE

PSYCHE, the entomological journal, is clearing out its reserve of reprints because of a shortage of space. We have tabulated below the Lepidoptera papers from their list. Every paper would be of at least historical value to any American Lepidopterist, and if you are assembling a reprint library, this will give it quite a boost.

According to the note of explanation accompanying the reprint list, the price is 1½¢ a page. Checks should be made payable to: "Psyche", and orders addressed to "Psyche, Biological Labs., Harvard University, Cambridge 38, Mass." Several copies of any papers may be bought by anyone, if needed. In the following list, the number of pages is given in brackets after the year.

BARNES & LINDSEY. A New Species of Heterocampa (Notodont.). 1921.(2).
-. Notes on Noctuidae with Descriptions of some New Species. 1921.(2).

BARNES & McDUNNOUGH. List of Sphingidae of America, North of Mexico. 1910.(17).
-. On Certain Olene Species. 1911.(3).
-. On the Early Stages of Certain Geometrid Species. 1912.(7).
-. On the Early Stages of Some Western Catocala Species. 1913.(5).

BARTSCH,R.C.B. "Sugaring" in the Autumn. 1912.(5).

COOLIDGE,C.R. Western Lepidoptera. III. Notes on Leptarctia californiae. 1910.(4).
-. Western Lepidoptera. IV. 1911.(3).

DAVIS,W.T. The Red-margined Luna, a New Variety. 1912.(2).

FIELD,W.L.W. The Offspring of a Captured Female Basilarchia proserpina. 1910.(3).
-. Hybrid Butterflies of the Genus Basilarchia. 1914.(3).

FORBES,W.T.M. The Aquatic Caterpillars of Lake Quinsigamond. 1910.(9).
-. Another Aquatic Caterpillar (Elophila). 1911.(2).
-. The North American Families of Lepidoptera. 1914.(13).
-. On the Tympanum of Certain Lepidoptera. 1916.(10).

GRINNELL,F. Some Variations in the Genus Vanessa(Pyrameis). 1918.(6).

MARCHAND,W. The Specific Differences Between Apantesis nais Drury, A. vittata Fabr. and A. phalerata Harris. 1917.(2).

NEWCOMB,H.H. Argynnis cybele Fab., variety baal,Streck.Melanic.1910(1).

RAU,P. The Period of Incubation of the Eggs of Samia cecropia.1912.(2).
-. Notes on the Duration of the Pupal Stage in Certain Lepidoptera. 1913.(2).

REIFF,W. Argynnis cybele Fabr. Forma bartschi. F.Nov. 1910.(4).

SWETT,L.W. Geometrid Notes. A New Variety of Nyctobia. 1910.(2).

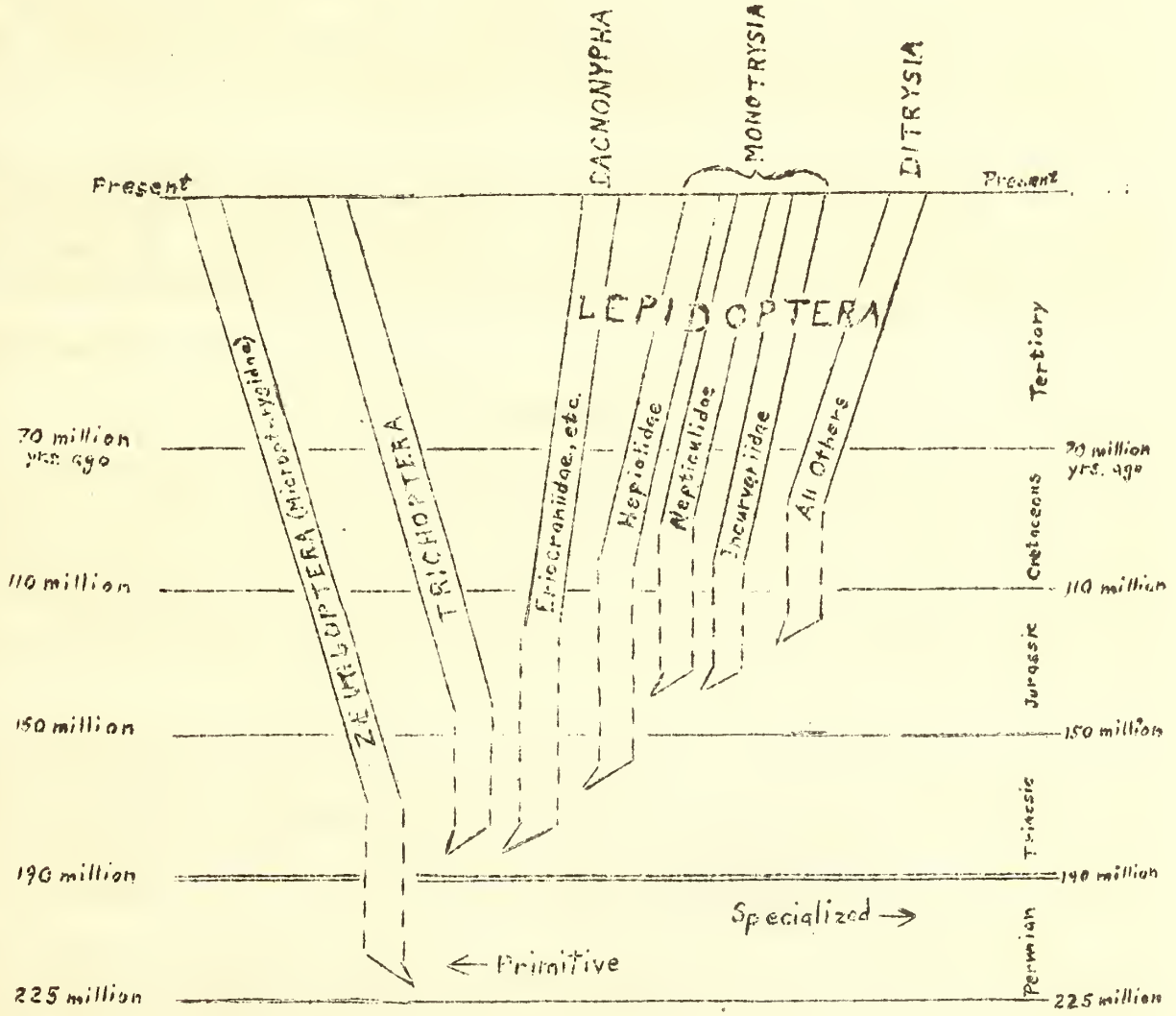
WALKER,F.H. Synchronous Movements in Vanessa antiopa larvae, with Notes on the Attraction of Certain Male Lepidoptera by the Females of their Own Species. 1919.(4).

A NEW CLASSIFICATION OF THE LEPIDOPTERA

A highly important paper by Dr. H.E. Hinton, of the British Museum, entitled: "On the homology and nomenclature of the setae of lepidopterous larvae, with some notes on the phylogeny of the Lepidoptera" appeared in the July 22, 1946, Transactions of the Royal Entomological Society of London (vol.97:pp.1-37). Although we have known of this paper for some time, we obtained a copy only very recently. It is so significant that we are reviewing it separately from the regular section on recent papers.

The present paper has only 37 pages, and the author indicates that it anticipates "some of the results of two papers now in preparation, one on the systematic position of the Micropterygidae and one on the natural groups within the Lepidoptera."

The conclusions on phylogeny in the present paper are best shown by the following diagram adapted from Hinton's Figure 1:



The interrupted lines represent the zone of uncertainty of origin. That is, the top of the interrupted line shows the latest time the group

may have arisen and the bottom of the same line shows the earliest probable time of origin. The tapered base shows the direction from which the group evolved. Since Hinton considers the Monotrysia as suborder, with all of its members derived from one insect, the chart should show this unity. His chart actually makes the Ditrysia appear to stem from the Incurvaroidea.

The classification is based primarily on larval studies, although the larger categories are characterized also by important morphological differences of the adults. As is seen from the chart, Hinton follows Chapman (1917) in placing the Micropterygidae in a separate order (Zeugloptera), closer to the caddis-flies (Trichoptera) than to the Lepidoptera. He divides the latter into three suborders: the new suborder DACNONYMPHA, for the very primitive Eriocraniidae; Börner's (1939) suborder MONOTRYSIA, for the Hepialidae, Nepticulidae, and Incurvariidae; and Börner's DITRYSIA, containing all other families. Hinton admits that his "Dacnonympha" equals Packard's (1895) "Paleolepidoptera", but ignores priority claims for higher categories, as do too many entomologists, merely because the International Rules do not directly apply. In published work your reviewer would unhesitatingly use Packard's well-composed name in preference to Hinton's. It will be noted that Hinton considers the Sphingidae among the highest Lepidoptera, with the butterflies (Rhopalocera) below the Macroheterocera and above the Microlepidoptera. This is a widely held viewpoint.

The major portion of this paper erects a new system for naming the thoracic and abdominal setae of the larvae. Dyar's and Fracker's systems are abandoned, with the setal designations based on names (such as "M" for microscopic), rather than consecutive numbers or Greek letters. The 24 figures are useful in understanding the new nomenclature.

C.L. Remington

GENERAL NOTES

Don Stallings, at Caldwell, Kansas, reports a very poor spring, with persistent cold and incessant rain in Kansas. The Stallings and Turner collecting combine has laid plans for another active summer. By now they should have returned from a short trip to northeastern New Mexico. Later they expected to hit the Black Hills and Wyoming. This month the destination was to be the high Rockies of Colorado. We hope to be able to give some of their results at the end of the summer.

Mr. V. Nabokov has contributed an interesting observation on European Catocala, of which he was reminded on reading Dr. Brower's article in the June NEWS. He has observed C. fraxini, a beautiful Palearctic species, feeding on dead fish in Russia. The habit should be investigated for American Catocalae. Of course, most collectors have seen butterflies flocking to well-decayed fish, but we know of no record for Catocalae or other moths.

Mr. Nabokov also saw Smerinthus populi, a European sphinx moth similar to Pachysphinx modesta of North America, rushing back and forth over ponds and puddles at night, flicking the surface of the water with the tip of their abdomen in the manner of ovipositing dragonflies. Both sexes exhibited this unexplained behavior. Lep.Soc. members who are particularly interested in Sphingidae should watch for this habit in Smerinthus, Paonias, Cressonia, and Pachysphinx.

NOTICES BY MEMBERS

Wanted- All species of the hesperioid genus Megathymus for exchange or purchase. Many rare Lepidoptera offered in exchange. P.S. Remington, 5570 Etzel Avenue, St. Louis 12, Missouri.

Pupae and larvae of Arctiidae, especially Apantesis, needed for systematic studies. Marion E. Smith, Fernald Hall, Amherst, Mass.

Wanted- Samples of the following genera of Satyridae, found in North and South America: Argyrophorus, Cheimas, Cosmosatyrus, Cyllopsis, Daedalma, Drucina, Elina, Eretris, Faunula, Idioneura, Manerebia, Neomaeas, Neosatyrus, Panarche, Polymastus, Proboscis, Pseudomaniola, Pseudosteroma, Sabatoga, Sinarista, Steremnia, Tetraphlebia, Thiemeia, or Zabirnia. Have some 5000 duplicates representing perhaps 500 species or varieties of Lepidoptera from all over the world to offer in exchange. Arthur H. Moeck, 301 East Armour Avenue, Milwaukee 7, Wisconsin.

EREBIA, OENEIS, & BRENTHIS, ETC. from Arctic Canada for sale at reasonable prices. R.J. Fitch, Rivercourse P.O., via Lloydminster, Sask.

Catocalas and their eggs and larvae wanted (also various other Lepidoptera). Can offer many Lepidoptera and some rare material in other orders. A.E. Brower, 5 Hosptial Street, Augusta, Maine.

LYCAENIDAE & PIERIDAE from all parts of North America desired. I am building up my collection from scratch, and need virtually everything. Offer butterflies of all groups from Southern California. Graham Heid, 11745 Hesby Street, North Hollywood, California.

LEPIDOPTERA FROM NOVA SCOTIA of any group offered in exchange for North American Satyridae, Catocala, Arctiidae (esp. Eubaphe), and Geometridae (esp. the Plagodis-Metarranthis group and Caripeta and Semiothisa). Douglas C. Ferguson, Box 617 Armdale P.O., Halifax, Nova Scotia.

CASCADE MTS. LEPIDOPTERA offered in exchange for species from other parts of North America. J.C. Hopfinger, Brewster, Washington.

WANTED- North American SPHINGIDAE AND CATOCALA. C.W. Baker, Waynesburg, Ohio.

SPHINGIDAE, ESPECIALLY SPHINX (Hyloicus) desired. Will collect in any family of Lepidoptera in exchange. Wm. E. Sieker, 119 Monona Ave., Madison, Wis.

Specializing in systematics and life histories of North American GEOMETROIDEA. Would like to exchange and buy specimens in this group. Frederick H. Rindge, 437 Ocean View Ave., Berkeley 7, California.

If you have for exchange or sale North American CATOCALA or SPHINGIDAE from the Americas (N. & S.) and Antilles, write: Mrs. C. Reed Cary, Ellet Lane & Wissahickon Ave., Mt. Airy, Philadelphia 19, Pa.

PAPILIOS of the MACHAON group desired. Offering in exchange Lepidoptera of any groups from Calif. and Ariz. Also larvae and pupae of the machaon group are desired. David L. Bauer, P.O. Box 469, Yuma, Ariz.

Since preparing the June NEWS with the note on Tilden's paper concerning ants and larvae of Lycaenidae we noticed a paper in the Oct., 1911, Entomological News (pp.359-363) by H.M. Bower of Chicago, on the "Early Stages of Lycaena lygdamus Doubleday". Bower observed egg-laying and collected eggs and larvae on Lathyrus (Perennial Vetch). He returned later in the season and found more mature larvae abundant. "These were in almost every case attended by ants which made the search rather easy as the ants invariably led to the discovery of a larva." Bower gives descriptions of each instar, as well as the egg and pupae, from reared material. Although he did not see larvae being carried into the ant nests, such may be the case. That the larvae may feed on ant larvae, like Maculinea arion in England, is very plausible, since the captive lygdamus larvae often fed on brother larvae, although supplied with plenty of food.

* * * * *

One letter in our interesting mail deserves particular comment. D.L. Bauer, of Yuma, Arizona, while expressing agreement with our comments in the May issue on the faults in regional lists, and with the general aspects of our stand against naming seasonal forms, asks some searching questions on the latter point. He gives several instances of Arizona butterflies which have remarkably different seasonal forms, such as Pieris napi, Strymon melinus, and Calephalis nemesis. While these are admittedly striking examples, and there are many others, such as Colias eurytheme, Zerene caesonia, Pieris protodice, Papilio marcellus, Phyciodes tharos, and many southwestern butterflies, with no hesitation it can be said that these seasonal forms should not receive Latin names and be considered in our zoological nomenclature. When it is desirable to designate these broods of the same insect, merely call them: gen. vern. (spring), gen. aest. (summer), gen. autum. (fall), and gen. hiem. (winter). Or if the broods do not follow seasons, designate them as: gen. I, gen. II, gen. III, gen. IV, etc. The only infra-specific categories which deserve Latin names are those which are concerned directly in speciation. Geographic races, and ecological forms are so concerned. Seasonal forms and polymorphic forms (Colias white females) certainly are not, although their relative proportions in the population may be characteristics of different races.

We are very sorry that our planned schedule for the series of articles on Life History Studies has necessarily been changed. We expect to have most of the articles written by specialists, and due to too short notice they were unable to write what we needed in time for numbers 2, 3, and 4 of the NEWS. Eventually the series will go ahead as planned. Meanwhile, in order to give you the necessary information for preserving immature stages of any rare or little-known species you find this summer, the article on page 31 was prepared.

C.F. dos Passos, A.C. Frederick, and W.P. Rogers took a cooperative collecting trip to Vermont at the end of May in search of Erora laeta. However, the New England weather thwarted the attempt by remaining cold and cloudy throughout their 3-day stay at the locality.

THE LEPIDOPTERISTS' NEWS is the monthly newsletter of The Lepidopterists' Society. Membership in the Society is open to anyone interested in the study of butterflies and moths. The dues are $1.00 per year, and the NEWS is sent to all members. Please make checks and money orders payable to: Charles L. Remington, Treas. Address all communications to P.O. Box 104, Cambridge 38, Massachusetts.

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The Lepidopterists' News

SMITHSONIAN INSTITUTION
SEP 15 1947
NATIONAL MUSEUM

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P. O. Box 104, Cambridge 38, Massachusetts

Edited by C. L. REMINGTON and H. K. CLENCH

Vol.I, No. 4 August, 1947

In another month or two most collectors will have to interrupt collecting until next spring, and will begin tallying their available bartering material for a busy exchange season. In the hope of facilitating your correspondence and exchanging, the Lepidopterists' Society will prepare the annual up-to-date list of members, addresses, and specialties, to be mailed with the October NEWS. The original plan was for December, but such a late date would be less desirable from the viewpoint of exchanging. If you find October the best, it will become the regular time for distribution of the annual membership list. With the exchange season approaching, now is the time to send in your insert for the "Notices by Members" column. At this time of year we will be glad to expand it to two or even three pages.

* * * * * * * * *

Perusal of American entomological journals which were appearing about twenty or thirty years ago has reminded us of a trend which we are sorry to see. These older numbers contain numerous advertisements in the exchange columns of moth and butterfly eggs and cocoons and chrysalids, offered for exchange or sale. At least one prominent society actually sold pupae reared by its members, to build a fund for a specific purpose. Articles published in the journals by such enthusiasts as Rowley, of Louisiana, Missouri, comprised annual accounts of the recent season's larva collecting. Current journals show current trends in rarely having any notice offering living pupae. Perhaps the improved roads and almost universal possession of automobiles has lured collectors out into the "choice" hunting grounds for quick trips and furious net-swinging, and a lack of interest in their local fauna has resulted. Intensive collecting in one region for several years usually leads to interest in rearing and life history studies.

The NEWS proposes to lend enthusiastic support to any efforts to rear Lepidoptera to the pupal stage for exchanging or selling, and offers its pages for advertisements of this sort. We know that many members would buy or exchange for living pupae, so we urge anyone with the inclination for rearing to exploit the condition. If pupae are to be reared for exchange or sale, it is essential that they be labeled with the locality from which the parents were taken. Specimens obtained from pupae should have cabinet value equal to any other specimens of the same species. In addition, a breeder will not be successful in selling material unless the prices are reasonable. The ridiculously high prices now being asked by the few remaining dealers undoubtedly dampens the interest of prospective buyers. So get out the rearing cages and stock up. Good data and fair prices will assure you of plenty of Lepidopterists' Society business.

4. The Butterflies of California

by John A. Comstock*

Approximately 436 species and subspecies are given in Comstock's Butterflies of California - nearly thirty percent of the presently known North American butterfly fauna, as listed in the 1938 McDunnough Checklist. This high degree of representation in one state has given the book a prominent place in Lepidoptera literature, a position well justified by its other qualities.

The 63 colored plates and the generous attention devoted to the early stages, a specialty of Dr. Comstock, are very useful. In the plates, generally of excellent quality, are to be found examples of virtually every valid form and most of the aberrations occurring in California, many taken from types. In addition, for each specimen illustrated, full data are given as to place and date of capture.

Information on the early stages of a very large number of species is given in the form of host plants and excellent figures of the egg, larva, and pupa. Dr. Comstock, with the aid of Commander C.M. Dammers, has since added materially to the number of California species thus known, in the pages of the Bulletin of the Southern California Academy of Science.

In the text, though descriptions are brief, the habitat, approximate dates of appearance, and general range are usually given, and in the case of very local butterflies, often the exact locality.

At the close of the book there are: a complete check list including varietals and synonyms; maps showing the counties and life zones of California; information on the capture, preservation, arrangement, storage and exchange of specimens; an unfortunately brief discussion of leading periodicals with addresses; a short description of the grosser anatomy of butterflies; a reprinting (with original references) of the author's published papers to 1927.

Criticism of the book may be directed at the inordinate amount of space given to the descriptions and depictions of aberrations--space that might have been devoted much more profitably to other material. Further, the absence of such valuable aids as keys, bibliographic references, and anatomical characters of families, has somewhat hindered its general usefulness.

Though in his introduction Dr. Comstock says that it is primarily intended for "the nature lover" the acid test of time has proven its great value to the veteran student as well. It is possible to identify quite accurately by means of the plates most species of far Western butterflies.

Harry K. Clench

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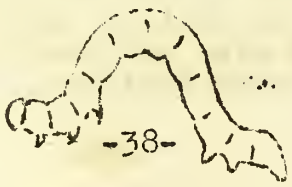
*Published in 1927 by Dr. J.A. Comstock, Los Angeles, California. 334 pp., 63 color plates, 84 text illus. Listed by Sherman, 132 Primrose Ave., Mt. Vernon, N.Y., at $15.00.



4. Alpheus Spring Packard, Jr.(1839-1905)

The rapid development of the biological sciences in the 19th century was at the same time the result and the opportunity for the contributions of the great naturalists of that period. The exiguity of scientific knowledge made it possible for one man to delve into many fields, with significant consequences. A distinctive example of this type of naturalist is A.S. Packard. Although most of his work was in entomology, he also contributed to other branches of systematic, structural, and economic zoology, and to geology, paleontology anthropology, and embryology.

Packard was born in Brunswick, Maine, on Feb. 19, 1839, of a distinguished lineage of scholars. It was at Bowdoin that Packard commenced his higher education, and when still a junior in college he added fuel to the fire of his enthusiasm by joining a scientific expedition to Greenland and Labrador. From 1861 to 1864, after obtaining an A.B. degree from Bowdoin, he studied under the illustrious Louis Agassiz at Harvard University. While there he assisted Samuel Scudder in the Insect Dept. of the Museum of Comparative Zoology, specializing in Lepidoptera, and became acting curator from 1862-3. Soon after his discharge from war service, he became librarian and acting custodian of the Boston Society of Natural History, again in close contact with Scudder. In 1867 he married Elizabeth Debby of Salem, and they later had three children.

Well fitted by his training under Agassiz, Packard entered in 1867 upon professional activities at the Essex Institute in Salem, Mass. which soon was absorbed by the Peabody Academy of Science, and Packard assumed the position of curator of invertebrates and later Director. The leading publication of his day, the American Naturalist, had its inception at Salem during this time, with Packard as editor, a post he held for over 20 years. While he was with the Peabody Academy he lectured on entomology at several colleges in the region. Having worked with Agassiz at the famous summer school of biology, Packard also founded such an organization at Salem after Agassiz died. In 1878 he accepted an appointment to a professorship at Brown University, where he lectured in zoology and other scientific fields until his death on February 14, 1905. Among academic degrees he held were an S.B., M.A., M.D., and an honorary Ph.D. and LL.D.

Packard's great contributions to entomology were marked especially by his several textbooks, bringing together the available knowledge for the student, layman, and professional entomologist. His Guide to the Study of Insects had 8 editions in 15 years, and A Textbook of Entomology was for many years the best general book on the subject. Work on Lepidoptera, both taxonomic and morphological, penetrated into many families, his larger works being a monograph on Geometridae and the two parts of his famous Memoir of the National Academy--"Monograph of the bombycine moths of America north of Mexico, including their transformations and origin of the larval markings." His pioneering in the field led to his recognition by scientific societies all over the world. He became a fellow of the National Academy of Science, and of the Linnean Society of London, and an honorary president of the French Association for the Advancement of Science. Altogether his published works amounted to over 400, a lasting monument to his immense enthusiasm and ambition to contribute to the progress of zoology.

Jeanne E. Remington

25. Bell, Ernest L. "A New Species of Hesperiidae (Lepidoptera, Rhopalocera) from Venezuela." Zoologica,N.Y.Zool.Soc.,vol.32: pp.67-68, 1 fig. May 8,1947. Describes new species: Yanguna flemingi (Pyrrhopyginae), reared from pupa found at Caripito, Venezuela. Brief description, male genitalia figured. Pupal skin kept and described. Species named for collector.

26. Carpenter,G.D.Hale "Capture of butterflies in great numbers by the grass Setaria verticillata (L.) Beauv. in East Africa." Proc. Royal Ent. Soc. London,vol.21:pp.49-50. Sept.16,1946. Reports a natural "butterfly trap". The grass, Setaria, had caught thousands of butterflies by means of barbed bristles on the inflorescence. The principal victim was Acraea zetes, all males. A number of A. orina were caught in separate clumps, as were a very few specimens of a Papilio, Danaus, and two pierids. Various suggestions are given as to why the butterflies got into the inescapable grass. The most probable one is that one insect would be "caught inadvertently by the grass, and others would be attracted to it by vision." The collector, T.H.E. Jackson, considers this mass destruction a regular occurrence in Kenya.

27. Dickson,C.G.C. "The life-history of Phasis thysbe L. var. nigricens Aur. (Lepidoptera,Lycaenidae)." Journ.Ent.Society S. Africa, vol.9: pp.178-192, 23 figs. Feb.28,1947. Gives a very thorough description of egg, all 7 instars of larva, pupa, distribution, and habits, with figures of all stages and many magnified details. Var. nigricens compared with typical thysbe and P. palmus eggs, larvae, etc. A model of excellent life history study of the kind urgently needed for American Lepidoptera, and achievable by many Lep. Soc. members who are willing to be painstaking and thorough.

28. Forbes,W.T.M. "Buckeyes and Wegener." The Entomologist,vol.80: pp. 56-58. March,1947. Dr. Forbes of Cornell Univ., makes conclusions on zoogeography and geology based on the valves of the male genitalia in the genus Precis (Junonia). The 2 New World species, P. lavinia and P. vestina, are closely related to each other and distinctly different from the 5 Old World spp., in which the African species are closer to the European than to the American spp. He believes that the American ancestors came in through the Bering Straits to Alaska. The Atlantic rift is placed in or just prior to the Triassic, and is said to be much older than the Africa-Eurasia separation.

29. Gerould, John H. "Hybridization and Female Albinism in Colias philodice and C. eurytheme. A New Hampshire Survey in 1943 with Subsequent Data." Annals, Ent.Soc. of America, vol.39:pp.383-396. Sept.,1946. Professor Gerould has made the pioneer contributions to American butterfly genetics during the past 25 years. The present paper reports field surveys interpreted through his knowledge of Colias genetics. He has given careful records of the spread of C. eurytheme into New Hampshire and the dynamic effects on C. philodice. Apparently eurytheme males regularly prefer to mate with eurytheme females and "interspecific" matings are rare, especially where both species are abundant. He maintains that philodice and eurytheme should be considered different species which are hybridizing extensively at present. (We believe that Hovanitz proved their distinctness on the fundamental sterility basis without acknowledging the species separation.) Gerould also

questions, with clear reasoning, the correctness of lumping these American Colias under chrysotheme, typically a Palearctic insect, as advocated by Hagen(1883), Elwes(1884), Clark(1941), and Hovanitz(1943,etc.). Until chrysotheme can be interbred with eurytheme and philodice, there seems to be no sound course other than to consider it a different species.

30. Howes,W.George "Lepidoptera Collecting at the Homer, with Descriptions of New Species." Transactions, Royal Soc. of New Zealand, vol.76:pp.139-147,pls.8,9. Sept.,1946. This follows an earlier paper (1943), which gave a list of macrolepidoptera taken in the Homer district of New Zealand. The present paper is primarily the list of 128 species of microlepidoptera taken. Also gives some new records of macros. Describes as new: Aletia nobilia (Phalaen.), Xanthorhoe frigida(Geometr.), Proteodes smithi, Scoparia valenternota & S. claranota(Pyral.). Photographs of n. spp. given. Checklist gives no authorities for spp.! No collecting dates listed. Among butterflies, Erebia pluto, Vanessa gonerilla, and Chrysophanus (Lycaena) boldenarum mentioned as common (all three are also in Holarctic genera).

31. Munro,H.K. "A lengthened pupal period for a moth." Journ.Ent.Soc. S.Africa,vol.9:p.235. Feb.28,1947. Records emergence of Ludia delegorguei female after 4 years as pupa, and another female pupa still alive after 4 yrs. Two males emerged 1 and 2 years after pupation. How many members have discarded cocoons which failed to hatch after one year? Such notes as this are interesting and valuable.

32. Rau, Phil "Butterfly Aggregations in Temperate Regions." Annals, Ent.Soc. of America, vol.40:pp.13-14. March,1947. Presents valuable data on "about twenty-five aggregations of four species of butterflies" (Phyciodes tharos, Eurema lisa, Phoebis eubule, and Everes comyntas) observed one afternoon in a St. Louis County (Mo.) creek bed. All four species are very gregarious. P. tharos and E. comyntas kept strictly to themselves. Groups of E. lisa included smaller numbers of P. eubule. A faulty conclusion is reached because Mr. Rau, being unfamiliar with butterfly taxonomy, mistakenly placed P. eubule in the Papilionidae, rather than Pieridae! Every butterfly collector is well-acquainted with these mud-puddle aggregations and would contribute useful knowledge by carefully recording observations in a large number of cases. There is great doubt as to the plausibility of Mr. Rau's statement that butterfly "predilection for sociability may yet prove to be one of the early steps in the scheme of evolution of social life among insects."

33. Rindge, F.H. "Designation and Distribution of Types of Nepticula braunella Jones." Pan-Pacific Entomologist,vol.23:p.25. Jan., 1947. Jones had neglected to include type data or to designate types in describing N. braunella. The Jones collection is now at the Univ. of Calif. (Berkeley). Rindge designates types and notes the distribution of paratypes to several museums. This species was omitted from the 1939 McDunnough Checklist. Members will wish to add it.

C.L.R.

NOTES FROM A TRAVELLING EDITOR

The first month of our Thysanura and Entotrophi collecting trip has presented several opportunities to visit Lep. Soc. members, and we even managed to collect a few interesting Lepidoptera along the way.

At Cornell we received from Prof. W.T.M. Forbes a number of helpful comments on tightening up the NEWS. Prof. Forbes' second part of his 'Lepidoptera of N.Y. State' will be published shortly. J.G. Franclemont is continuing his researches on moths at the University. R.L. Chermock is preparing a taxonomic revision of the genus Limenitis (Basilarchia and Heterochroa), to be completed in the fall, when he expects to receive his Ph.D., and take up a position with a southern university. He is also revising two other Satyrid genera, Cercyonis and Euptychia. We were glad to meet Ross Arnett, editor of the COLEOPTERISTS' BULLETIN, and to exchange ideas with him.

At the U.S. Nat. Museum in Washington we renewed acquaintance with Dr. Austin H. Clark, who has surmounted a recent illness, and looks very well. His friend, Carroll Wood, told us that Clark's 'Butterflies of Virginia', comparable to the excellent 'Butterflies of the District of Columbia', should be published soon. W.D. Field, whom the writer knew at Camp Plauché, La., during the war, was rearranging the Papilio collection in the museum. Probably by now he has transferred from the Dept. Agric. to the Nat. Museum staff.

We arrived in the Great Smoky Mts. too early for Speyeria diana, the prize butterfly of the region. The Chief Naturalist, Arthur Stupka, has a good start toward an insect collection. Last year he took some fine Arctiidae at high altitudes. The collection also includes a good male of Erora laeta, taken in the Smokies.

The Ozarks of Missouri were having a good Lepidoptera year. Around the mouth of Big Spring, almost in the spray, we took 2 fresh Caleph. muticum, a few Feniseca tarquinius, and several other species. This is the southernmost capture we have made of C. muticum.

Texas was our collecting ground for several days. It was interesting to find the giant noctuid, Thysania zenobia, common at lights and resting under rock ledges. In Big Bend Nat. Park Hemiargus (Echinargus) isola and another Hemiargus were abundant, along with a Chlosyne, Pap. daunus, Dan. berenice, Limenitis bredowii and L. astyanax, Eurema gundlachia and nicippe, 2 spp. of Phoebis, Str. melinus, and other widespread butterflies. We took a single Strymon entirely strange to us. It would be hard to call many of the Pap. polyxenes of the Big Bend or Carlsbad anything but race americus.

In the High Rockies of Colorado collecting has been excellent, as always. The season is at least two weeks later than we have ever before seen it. It is quite surprising to find Euchloe ausonides coloradensis and E. sara julia still fresh in mid-July, and plenty of Incisalia and a Callophrys still flying. The snowy late spring nearly ruined Bill Hammer's earlier trip here, though Don Eff and Bill took 92 Euphydryas capella in one afternoon. We have been collecting in our old favorite spots with P.S. Remington of St. Louis and Don Eff, of Boulder, Colo. We spent part of one day with the V. Nabokovs of Cambridge, Mass., in the famous Tolland sphagnum bogs, taking plenty of Boloria selene (myrina) tollandensis and some B. frigga sagata. Two days later, with PSR and Don Eff, we also found B. aphirape alticola there. Don snagged a couple of Pap. indra and we have several fine P. brucei. Nabokov reported taking a large number of the rare Mitoura spinetorum on the road near Estes Park early in the morning. He has also taken more Eupithecia for Dr. McDunnough. He finds Colorado much richer than Utah.

C.L. REMINGTON

FOSSIL LEPIDOPTERA

by C.L. Remington

The "Natural Classification" so diligently sought by the great Lepidopterists, as well as other zoologists and botanists, can be approached not only by the study of homologies of the structures of the living species, but also through a study of the fossil record. Lepidopterists are rarely aware of the existence of fossils of their group.

Samuel Scudder, a great paleoentomologist as well as Lepidopterist, studied the fossil butterflies. Meyrick, and recently Rebel (1934,'35) and Kusnezov (1941) have studied the moths. However, the knowledge of the Tertiary Lepidoptera, like most Tertiary insects, needs revision to bring it in line with recent work on the living species.

Dr. R.J. Tillyard, probably the greatest student of insect evolution who has ever lived, believed the first true Lepidoptera separated from the Trichoptera (caddis-flies) in the Upper Triassic Age(about 160 million years ago). The great development of the moths and butterflies occurred in the Cretaceous(130 to 66 million years ago), concurrently with the development of the flowering plants, which now form the food of most Lepidoptera larvae. Tillyard concluded that the Rhopalocera (butterflies) are a group well separated from all other Lepidoptera, arising in the Lower or Middle Cretaceous(100 million years ago).

The oldest known Lepidoptera <u>actually represented by fossils</u> are Psychidae from the Eocene Green River Shales(bottom of the Tertiary - 60 million years old). The remarkable Baltic Amber, in which are preserved insects in fossil pine resin with every detail visible, has yielded Micropterygidae, Eriocraniidae, Incurvariidae, Tineidae, Lyonetidae, Oecophoridae, Gelechiidae, Tortricidae, Pyralididae, Psychidae, and an uncertain lycaenid. The Baltic Amber is now considered to be Oligocene(40 million yrs. old), but is claimed by Kusnezov to be Eocene (60 million yrs. old). At any rate, Lepidoptera were well-developed then, and in many cases the present genera had already evolved 50,000,000 years ago. The Baltic Amber contains only small insects, so although the butterflies and larger moths were undoubtedly abundant by the Oligocene, they are absent from the Amber.

From the higher Tertiary beds of Aix and Radoboj in Europe and Florissant of Colorado have come several butterflies, by far the finest being the world-famous specimen of Scudder's <u>Prodryas persephone</u> from the Florissant. This specimen is so perfectly preserved that the details of the antennae, palpi, thorax, abdomen, and <u>wing markings</u> are clearly visible. Even the form of the scales can be seen under the microscope! The writer recently examined the type specimen, through the kindness of Professor F.M. Carpenter, and was amazed at the perfection of this rock fossil at least 30 million years old. The families of butterflies of the Tertiary include the Parnassiidae, Pieridae, Satyridae, Nymphalidae, Libytheidae, Lycaenidae, and Hesperiidae. The moths have not yet been studied carefully.

The most significant fact for Lepidoptera evolution is that the morphologically primitive families, such as Micropterygidae and Eriocraniidae, are well-represented in the fossil record, whereas the highest families are rare or absent. The discovery of middle or lower Cretaceous Lepidoptera fossils will be illuminating in testing the validity of phylogeny based on morphological homologies.

COMMENT FROM PROFESSOR FORBES

One of the most helpful letters we have received since establishing the NEWS came recently from Prof. W.T.M. Forbes, of Cornell University. He very validly points out a few errors in the NEWS and adds such a host of valuable bits of information that we wondered about the most effective way to make them available to the members of the Society. Direct quotes under specific subjects probably set the comments off so that members can use them as supplements to our coverage in the July NEWS.

1. HANDLING SPECIMENS (see p. 26) "If one must use chloroform, acetic ether, carbon tet., etc., it should be put in a vial inserted in the cork, so that the fluid will not touch the specimens. Use a cork borer the right size, make a hole through the cork and insert a small (perhaps 1 dr.) vial, upside down. Fill this with absorbent cotton and the killing fluid can be poured on the cotton and will not drip down into the bottle. The same rig is useful with ether only for stupefying females you want to look over and perhaps save for eggs. Leave them in till stupefied, but still kicking a little, roll them out and transfer to a cardboard box or the cyanide as the case requires. In this case the bottle must be aired when not in use or the ether may decompose and become deadly. I find ether unsafe for killing,-too many recover, especially at high altitudes. I had to use it in Switzerland and the ether would sometimes boil in the supply vial when I took the cork out.

"Don't paper specimens the same day, especially after chloroform, AC-Eth or C-tet. Leave in a relaxing jar and fix up the next morning, after the rigor has passed off. Even delicate colors or green moths will not fade if the specimens had not dried before going into the jar."

"Members of the 'smaller' skippers must often be cut across the metapleura with a lance-needle to release the hind wing muscles, which will sometimes remain cramped no matter what you do. I find even the smallest butterflies O.K. from papers, but it is best to use a fairly large paper and put several in a paper." (A host of Lep.Soc. members will rise up in indignation on this one point. Most exchanging collectors consider the correspondent sloppy if he puts more than one in an envelope, and most have received boxes with numerous broken antennae, palpi, legs, and even wings because of this method.-C.L.R.) "Moths are O.K. well below the limit you give so far as size is concerned (again several to a paper); but thick bodied types, even much larger should be field pinned if possible on account of the tegulae and thoracic tufting, which may never come back into position with a papered specimen. But th main reason for field pinning is to make it possible to sort your catch before mounting. When collecting for your own mounting later (not where the papered material is to be used directly in exchange etc.) it is best to pack two to a paper, with wings overlapping and bodies away from each other; it makes packing of the papers easier and reduces danger of crushing. There are several kinds of 'glassine' envelopes, and one kind is all right. But the only test is the relaxing jar; put one in and if it is limp but not sticky next morning it is reasonably safe to use, and makes sorting of material easier. Still I agree with you that absorbent paper is the thing to recommend. For small things a double triangle (toilet paper folded together with newspaper or the like, with the tissue paper inside) is sometimes useful."

2. HOLLAND'S BOOK (see p. 27). "I agree on the 'Butterfly Book'. Did you know that the publishers refused colored plates and Holland paid for them himself at $75. each? The plates added in the 'new edition' cost

(cont. on p. 46)

Collecting seems to be poor throughout the entire East. Here in the vicinity of Boston we can speak from experience. Scarcely an Incisalia was seen the whole spring, and Lycaenopsis pseudargiolus (lucia or marginata), usually very thick, was encountered in the form of a single female! P. rapae and several spp. of Erynnis have had the fields and woods nearly to themselves. Others report the same situation. Dr. E. Munroe, of Quebec, reports the worst collecting in over 50 years, though he adds that he has taken a few interesting things: Deidamia inscriptum (new to the province), P. rapae var. novangliae, and others. In contrast, the West seems to be enjoying good collecting everywhere, as you have probably already noted in our article on page 42 of this issue.

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Another new author for the NEWS, with her first article in this number, is Mrs. Jeanne E. Remington, wife of one of your co-editors. Specializing in Gall Insects, she hopes to give us for a later issue an article on gall-making Lepidoptera.

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Although we have made no effort to expand our subscriptions to include countries outside of North America, we can now report 4 for England, 2 for France, 1 for Honduras and an exchange offer from Sweden. With the exception of the last, they are all gift subscriptions, from friends here. This might serve as a tip to some of you other Lep. Soc. members who have correspondents abroad that may be interested in getting the NEWS. Just send us name and address and a dollar, and we will enter them on our list, and see that they get the NEWS promptly, as well as a notification of the donor.

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In the second number of the NEWS, on page 21, we mentioned the theft of a number of butterflies from several Australian Museums. On almost the same day that that number was mailed we got our copy of TIME (June 2), and on page 38 found an elaboration of the same incident, which fills in some interesting gaps in the story. For those who may not have seen it: 1) the collector's name is given--Colin W. Wyatt (we prefer the term collector--he IS a Lepidopterist); 2) several species are mentioned: Adaluma urumelia, Ogyris zozine splendida, the Diana Moonbeam (Philiris d. diana)--all Lycaenidae, and no others are mentioned! 3) cause: a wrecked marriage!

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Those of you engaged in the breeding of Lepidoptera will be interested to learn of a new type of breeding cage now on the market, of metal and plastic construction. The cage comes in several sizes, from a maximum of 10" to a minimum of 4". Other sizes and types can be made to individual specifications. For details write Bio Metal Associates, Box 346, Beverly Hills, California.

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In one of the next two issues we will present a much enlarged list of the Board of Specialists (see the June NEWS).

him 2 or 3 times as much. I think a new 'Butterfly' and 'Moth Book' should use the old plates, with a new text, but it might not be easy for a new writer to match his style. Most of us are either sloppy or dry." (The dryness of present-day scientific papers is a "pet-peeve" of ours, and we expect to say more on the subject later.--Eds.).

3. LITERATURE REVIEWS (see pp. in each issue). "I wonder that so many editors cry out for more illustration, but always charge the authors extra for them, even in the case (line cuts), where they really cost hardly more per page than text. Journals in other fields do not do this. They either include simple figures in the article as a matter of course, or else view them as unimportant,-only entomological editors seem to be so inconsistent as to ask for them and charge extra." (The NEWS editors are looking forward hopefully to an endowed fund to finance illustrations in the Lep. Soc. journal for research papers when the propitious time for fouding that journal arrives.)

4. PRESERVING EARLY STAGES (see p. 31). Prof. Forbes gives a detailed, complicated set of instructions for preserving larvae. This will be included in a later issue of the NEWS, but most collectors will find our method on p. 31 the most practical. "As to pupae I usually advise saving the emerged shells. The structures are always clear, and the determination surer than a field-found pupa can ever be. I admit parasitized ones, if the parasite came out the side, make the finest specimens, I consider there is no excuse for a man who is rearing material to throw away all the pupa shells."

5. HINTON (see p. 33). Prof. Forbes disagrees with Hinton, feeling that he overlooks or undervalues too many important characters. Prof.Forbes pointed out some weak spots in Hinton's arguments to the senior editor in a most convincing manner on the latter's visit to Ithaca in June.

6. ON SPHINGIDS OVER WATER (see p. 34). "I once saw a sphinx in South America behaving as Nabokov's populi did, so far as I could see; I assumed it was drinking, but it was flying back and forth just above the water surface. I did not catch it but think it was a Perigonia,...certainly not a Smerinthine."

7. Prof. Forbes states his viewpoint on nameability below the rank of species in a rather orthodox system undoubtedly used by most of the older butterfly taxonomists, and in many ways firmly revised since the genetical explanations for phenotypic variation have been made known, and we are omitting his full statement from this issue. However, the following statement will probably be agreed with by all conservative taxonomists, and needs emphasis: "On the other hand I don't think races should be named unless they are at least 90% identifiable without the locality label (perhaps 75% in the special case where a monograph of the whole variation of a species is being made)."

Our warmest thanks go to Prof. Forbes for his contribution.

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A series of unforeseen events and the summer-long absence of one editor have resulted in the long delay in completing and mailing No.4 of the NEWS. We are hurrying it off now with apologies for its lateness and the out-of-date quality of some previously mimeographed pages. Expect No.5 after several days and a return to schedule with No.6. CLR

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NOTICES BY MEMBERS

Members are invited to contribute to this page any special requests. There will be no cost for inserting notices. Unless withdrawn sooner by the contributor, each notice will be carried for three consecutive numbers. If the notice is to be continued, the contributor must again submit it, with new wording. Please try to make the wording interesting, to improve the chances of its success. There will be no limit set on length of notices, but overly verbose ones may be rewritten to economize on space. Your needs have an excellent chance of being met through this column, so submit your notice now.

Wanted- All species of the hesperioid genus Megathymus for exchange or purchase. Many rare Lepidoptera offered in exchange. P.S. Remington, 5570 Etzel Avenue, St. Louis 12, Missouri

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Pupae and larvae of Arctiidae, especially Apantesis, needed for systematic studies. Marion E. Smith, Fernald Hall, Amherst, Mass.

Wanted- Samples of the following genera of Satyridae, found in North and South America: Argyrophorus, Cheimas, Cosmosatyrus, Cyllopsis, Daedalma, Drucina, Elina, Eretris, Faunula, Idioneura, Manerebia, Neomaeas, Neosatyrus, Panarche, Polymastus, Proboscis, Pseudomaniola, Pseudosteroma, Sabatoga, Sinarista, Steremnia, Tetraphlebia, Thiemeia, or Zabirnia. Have some 5000 duplicates representing perhaps 500 species or varieties of Lepidoptera from all over the world to offer in exchange. Arthur H. Hoeck, 301 East Armour Avenue, Milwaukee 7, Wisconsin.

EREBIA, CENEIS, & BRENTHIS, ETC. from Arctic Canada for sale at reasonable prices. R.J. Fitch, Rivercourse P.O., via Lloydminster, Sask.

Catocalas and their eggs and larvae wanted (also various other Lepidoptera). Can offer many Lepidoptera and some rare material in other orders. A.E. Brower, 5 Hospital Street, Augusta, Maine.

LYCAENIDAE & PIERIDAE from all parts of North America desired. I am building up my collection from scratch, and need virtually everything. Offer butterflies of all groups from Southern California. Graham Heid, 11745 Hesby Street, North Hollywood, California.

You are invited to place your name in the Scientists' Directory. Names classified and listed by groups and covering all lines of nature and science, amateur and professional. No charge for listing. SCIENTISTS' DIRECTORY, Box 1344, Hartford 1, Connecticut.

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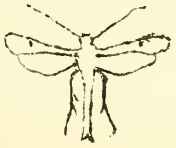
IF YOU BUY, SELL, OR DETERMINE MATERIAL SENT TO YOU FOR DETERMINATION, put your name in the SERVICE DIRECTORY. This covers specimens, equipment, and supplies for nature lovers and scientists. Box 1344, Hartford 1, Conn.

Butterflies of genus INCISALIA desired for examination, exchange, or purchase, from ALL PARTS OF NORTH AMERICA, for taxonomic revision now in preparation. Harry K. Clench, 48 Avon Hill St., Cambridge 40, Mass.

PLEASE NOTIFY THE NEWS OF CHANGE OF ADDRESS



(Continued from page 47)

ENGLISH BUTTERFLIES. 272 specimens of 65 species (total English species: 72), set Engl. style (low). Will give these to anyone who will pay postage and return boxes promptly, as I need space in my cabinet. Arthur D. Hall, Great Village, Nova Scotia, CANADA.

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FOR SALE. Eight glass-topped wood insect cases, 12 x 16 x $2\frac{1}{2}$", very slightly used. $40.00. Roderick R. Irwin, 1005 S. Bloomington St., Streator, Illinois.

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WANTED: Satyridae of the genus Minois from all parts of North America, esp. M. damei. Exchange or examination, for purposes of a revision. Ralph L. Chermock, Dept. Entomology, Cornell Univ., Ithaca, New York.

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WANTED: N. Am. butterflies, all groups. Buy or exchange. Have many rare N. Am. and tropical spp. I particularly desire arctic material. Robert G. Wind, Rt. 1, Box 145, Livermore, California.

In the May NEWS we requested authors of papers on Lepidoptera to send us a few reprints of each paper for distribution to members requesting them. Understandably, several members have written asking to be placed on a permanent mailing list for any of these reprints we receive. We regret that we will not be able to handle the distribution in this manner, in fairness to all the members and because of the limited number of reprints which will be available. Any separates which we receive will be mentioned in the NEWS and will be distributed among members requesting them in the fairest way we can devise.

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Your travelling editor this summer is covering a good bit of ground. For those of you wishing to contact him, here is a list of dates and addresses:

Aug. 1	1324 Panchita Place, Santa Barbara, Calif.
Aug. 8	Eureka, Calif. (Gen. Del.)
Aug. 22	c/o J.C. Hopfinger, Brewster, Washington
Aug. 29	Yellowstone Nat. Park (Gen. Del.)
Sept. 14	5570 Etzel Ave., St. Louis 12, Missouri
Later	Home port: Biology Laboratories, Harvard, Cambridge, Mass

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The "Whistling Moth", Hectasia fenestrata Bois., an agaristid of Australia, is so named because of the clear whistling sound produced in flight by a ribbed membranous area on the fore wings.

THE LEPIDOPTERISTS' NEWS is the monthly newsletter of The Lepidopterists' Society. Membership in the Society is open to anyone interested in the study of butterflies and moths. The dues are $1.00 per year, and the NEWS is sent to all members. Please make checks and money orders payable to: Charles L. Remington, Treas. Address all communications to P.O. Box 104, Cambridge 38, Massachusetts.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P. O. Box 104, Cambridge 38, Massachusetts
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Edited by C. L. REMINGTON and H. K. CLENCH

SMITHSONIAN INSTITUTION
SEP 15 1949
NATIONAL MUSEUM

Vol. I, No. 5 September, 1947

PLANS FOR A SEASON SUMMARY

The November NEWS will be devoted almost completely to regional summaries of the Lepidoptera collecting season in America north of Mexico. This will be intended as an annual event, so that after a few years it may be possible to begin to understand the cyclic nature of butterfly and moth population fluctuations and other important trends. Any success in this project will be attributable only to the cooperation of Society members from all sections of the continent. Thus we urge as many as possible to contribute their reports. Eventually we expect to have each regional summary assembled by one member from each region, but this first year only the West has been so set up.

The points we hope to have answered are: 1) Was the flight period of the various species earlier or later than the average? 2) If either early or late, did it return to normal or otherwise change as the season progressed? 3) Did unusual climatic events (cold, drought, excessive rain, hurricanes, etc.) occur, and if so, what was their effect on Lepidoptera? 4) Did biological or human agencies (parasitism, fires, birds, etc.) affect Lepidoptera this year in an unusual way? 5) Did any individual species show very unusual changes--rare species suddenly common or vice versa?

It is not very helpful merely to call the season good or bad. In England it was found that collectors called any season bad which wasn't well above the average. We need more details.

See page 50 for a sample of the type of season summary needed.

California, Arizona, and Nevada collectors please send summaries to: Mr. Lloyd M. Martin, Los Angeles County Museum, Exposition Park, Los Angeles, Calif. Washington, Oregon, Idaho, and British Columbia collectors send summaries to: Mr. J.C. Hopfinger, Brewster, Washington. Collectors in New Mexico, Colorado, Utah, Wyoming, Montana, Alberta, and Saskatchewan write to: Mr. Donald Eff, 820 Grant Street, Boulder, Colorado. Other central summarizers have not been organized this year, so members in all other regions please send summaries to the editor. In order to be included in the Season Summary reports need to be received before October 30th. All contributors will be listed in the November NEWS.

C.V. RILEY & LIFE HISTORY STUDIES

"The field is wide and there is an abundance of work to do, and more particularly serious work. It is more creditable to any author to publish some full and complete account of any one insect, whose characters and habits have hitherto been unknown, or a synopsis or monograph of some genus or family, than to cast to the world a whole number of hasty descriptions of species; for while descriptive work thoroughly and faithfully done is of the highest order and most creditable, it is a fact that many entomological writers have busied themselves with descriptive work which has had little other result than to confuse and perplex all subsequent honest and serious workers in the same field. ...it is chiefly among Lepidoptera that the unsatisfactory and careless descriptions prevail."

- Excerpt from 1886 Presidential Address to Entomological Society of Washington.

As noted on page 46 of the "August" issue, certain unexpected events took the NEWS off of the schedule so carefully followed in the first two numbers. The July NEWS appeared in early August and September issue was not mailed until September 27. Thus, the current number is not going out until mid-October. However, number 6 should be out before the end of the month, and its dateline will again be correct. As announced on page 37, the annual membership list will accompany the October issue. Editor Clench has left Cambridge to enter the University of Michigan and consequently may be unable to take an important part in the preparation of the NEWS. The help of Mrs. Jeanne E. Remington greatly eases the editorial burden, but there remains a real need for more contributions such as those of Dr. Brower (pp. 19,20, and 57). We hope to have more book reviews and life history notes written by specialists and biographies written by those with extensive libraries available. (We hope to have an article on Dr. Barnes by Dr. J. McDunnough during the next few months.) Meanwhile, please bear with us when the NEWS is not precisely on schedule, remembering that now it is virtually a one-man job.

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SAMPLE SEASON SUMMARY

A sample terse, but instructive summary might read thusly: "In general, the Lepidoptera were distinctly less abundant than usual. After a good early spring, a long cold spell in late May ruined collecting so that the Euchloe and Incisalia did not appear at all. Thruout June the coolness persisted, but collecting slowly improved, with all species flying about 3 weeks later than normal. Mitoura lamon, a May flier, actually was common in late June! By mid-July the flight periods had "caught-up" and the later summer Lepidoptera, such as the Catocala, many sphingids, aegeriids, Speyeria, and blues, occurred on the usual dates and in average numbers. The Strymon pupae produced far more yellow chalcid wasps than adult Strymon, so all members of this genus were relatively scarce. Acronicta americana was also heavily parasitized, and the Euphydryas phaeton larvae were killed in large numbers by a fungus. Dolba hylaeus, normally very common at flowers, was not found once and their usually abundant larvae could not be located on the Pawpaw shrubs. Catocala sappho and Strymon m-album were taken here for the first time. Hesperia metea, a very rare species here, was again taken in April."

5. The Moth Book*
A Popular Guide to a Knowledge of the Moths of North America

by W.J. Holland

The Butterfly Book by the same author was reviewed in the June NEWS. As Holland frankly stated, The Moth Book is an even less comprehensive, but popular guide to moth collecting. The pompous preface explains carefully that it was impossible to describe and figure all the North American moth species in one volume, so that "the effort was made to select those species which would adequately represent the various families and the commoner and more important genera."

After four chapters on life-history, techniques, classification, literature, etc., the book becomes for over 400 pages a briefly annotated enumeration of families, genera, and species of moths. As was Holland's custom, the book is sprinkled with eight delightful essays on mothy subjects. The stirring "Sugaring for Moths" must have easily converted even Holland's friend, Andrew Carnegie, to the ardent pursuit of the genus Catocala! The annotated species list necessarily has only a few words concerning each moth, generally only distribution and host plant being given. The 48 plates are all in color, containing photographs of 1505 specimens. Plate I is of larvae, painted by Mrs. Wm. Beutenmuller. There are also 263 text figures. It is very unfortunate that a large number of the moths on the plates are misidentified, the Catocala being the worst. (A series of corrections is being undertaken by the NEWS, the first of which is on page 57 of this issue.) The plates are so good that when a new Moth Book is published Holland's plates might well be retained. Even with their many incorrect identifications they compensate somewhat for the incomplete and too frequently mistaken text. Holland easily could have had space for many more species and details had he been able to condense the overly verbose grandiloquence which always bound him.

Holland wrote at the end of the book what seems a fair appraisal of his opus: "we feel...that we have given a fuller and more complete review of the whole subject to American students than has ever been essayed in any book by any other writer. ...the task has been...with the sole purpose of popularizing knowledge and helping those who have eyes to see and ears to hear, to understand something of a world which becomes the more wonderful the more we know of it."

C.L. Remington

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*Published in 1903, reprinted 1937, by Doubleday, Doran & Co., New York. 479 & xxiv pp., 48 plates(color), 263 text figs.

34. Adamczewski, Stanislaw "Notes on the Lepidoptera of Poland." The Entomologist, vol. 80, pp. 102-106, 133-136. May, June, 1947. Author continued scientific observations during German occupation and under great hazard. His work was greatly hampered when the Germans deliberately burned his library, notes, and collections. Present paper written from memory. Includes leaf-miners on Arctostaphylos, oak, and Populus, Lepidoptera of Gypsophila and Larix, and a new method of capturing insects by light (by ultra-violet, to circumvent German blackout regulations) which yields species not caught at white light.

35. Bell, E.L. "A Catalogue of the Hesperioidea of Venezuela." Boletin de Entomologia Venezuelana, vol. 5, pp. 65-203. Dec. 31, 1946. Known to us only from review by Torre-Bueno in Bulletin Brooklyn Ent. Soc. Said to list 155 genera with 409 spp.

36. Bell, Ernest L. "A New Genus and Some New Species and Subspecies of Neotropical Hesperiidae". Am. Museum Novitates no. 1354, 12 pp., 10 figs. Aug. 18, 1947. Another of Mr. Bell's fine studies on American skippers. Describes new genus Zalomes, genotype Z. colobus n. sp. (Colombia); also includes conspicua (Hayward) described in genus Molo, from Ecuador. Other new spp. are: Phocides johnsoni (Colombia), Codatractus amazonensis (Colombia & Brazil), Pellicia borra (Colombia) Pholisora lorea (Colombia) Dalla guasca (Colombia), Dalla dora (Ecuador), Rhinthon sarus (Brazil), Lerodea hoffmanni (Mexico), and Vorates paramus (Colombia). New subspp. are: Gorgopas viridiceps sneiderni (Colombia), Dalla guasca equatoria (Ecuador), and Poanes zabulon richteri (Colombia). The male genitalia of the 10 n. spp. are figured.

37. Bell, Ernest L. "Atrytone singularis Herrich-Schaffer and the subspecies insolata Butler." Am. Mus. Novitates, no. 1359, 5 pp., 1 fig. Aug. 22, 1947. A. s. singularis formerly known only from unique male type (Guantanamo, Cuba). Bell records two fresh pairs, taken 1943-46, also in Oriente Province, and a female from "Cuba". Species is undoubtedly very rare or local. Both sexes described in detail and male genitalia figured. Race insolata, of Jamaica & Hispaniola, much commoner than Cuban race, also described and compared in detail. Bibliography given.

38. Chapin, James P. "Cocoon to the Nth Power," Natural History (N.Y.), vol. LVI, p.141. Mar.,1947. Brief account, with photo, of huge communal cocoon containing 300-400 individual cocoons of Anaphe, the African Processionary caterpillar, found in the Gold Coast.

39. Clark, Austin H. "The Interrelationships of the Several Groups within the Butterfly Superfamily Nymphaloidea." Proc. Ent. Soc. Washington, vol. 49, pp. 148-149. June, 1947. Characterizes this superfamily by having prothoracic (fore) legs reduced in both sexes. Divides it primarily on larval characters. Recognizes 3 subdivisions:
    1. Larvae spineless & fusiform: Satyridae, Brassolidae, Morphidae, Apaturidae.
    2. Larvae spined & cylindrical: Marpesiidae, Nymphalidae, Ergolidae, Argynnidae, Acraeidae.
    3. Larvae spineless & cylindrical, with long fleshy filaments: Danaidae.

39. (cont.) Paper ends with list of families, subfamilies, and some tribes of Nymphaloidea. Clark distinguishes melitaeids from argynnids in that former "commonly wave their wings a few times before bringing them together, like vanessids." Reviewer feels uncertain of this distinction. Eyewitness accounts from members will be welcome to the NEWS. A separate kindly sent by Dr. Clark shows an important printing omission in the list of higher categories.

40. Corbet, A.S. "The Forms of Idrusia nyctelius (Dbl. 1845)(Nymphalidae) in the Malay Peninsula." The Entomologist, vol. 80, pp. 28-29. Feb. 1947. Genus close to Apatura. Polymorphic females, mimicking Euploea. Names as new, isina for female form mimicking males of E. diocletianus, with almost no description at all.

41. Corbet, A.S. "Nacaduba olyetti, a new species of Lycaenid from Ceylon (Lepidoptera)." Proc. Roy.Ent.Soc.London (B), vol.16, pp.1-2, 3 figs. 13 Mar. 1947. Describes this lycaenid as new and names it for L.G. Olyett Woodhouse, with simple drawings of male genitalia.

42. Dannreuther, T. "Migration Records, 1946." The Entomologist, vol. 80, pp. 107-112, 137-144. May, June, 1947. Summarizes 1946 migrations, mostly of Lepidoptera, in England, with brief notes on other parts of northwestern Europe.

43. Davis, R.A. "Notes on urticating Lepidopterous larvae becoming of some local medical importance." Proc. Roy. Ent. Soc. London (A), vol. 22, pp. 3-4. 5 May 1947. Records large scale outbreak of urticarial weals among humans around Beirut, Lebanon, caused by hairs of Pine Processionary Moth (prob. Thaumatopoea pityocampa Schiff). Even breeze seemed to carry the hairs. Also reports severe weals from larvae of Limacodidae in Gold Coast -- apparently alleviated by juices of larva applied to weal.

44. Evans, W.H. "Hesperiana", Proc.Ent.Soc.Wash., vol. 49, pp.162-163. June, 1947. A cursory survey of the progress of skipper study, including a historical summary, remarks on the role of genitalic studies. Estimates there are 2600 spp. (9000 names) and 450 genera of Hesperiidae, with over half the genera and species in the Americas. Reports that a catalogue of Old World species (except Africa, which has been covered already) is ready for publication, and a catalogue for America is under preparation.

45. Fletcher, T.B. "Some species of Cosmoclostis (Lep.:Alucitidae)". Proc.Roy.Ent.Soc.London (B), vol. 16, pp. 42-52. 9 June 1947. Describes as new: Cosmoclostis chalconota (Uganda), C. brachybela (Transvaal), and C. leucomochla (Ceylon & India), C. hemiadelphia (Australia), and C. lamprosema (New Ireland), all of which had gone under Meyrick's aglaodesma. The ten species of the genus occur only in Africa, Ceylon - Burma, and Australia-New Ireland, a support for the Wegenerian Hypothesis of Continental Drift. Fletcher has the interesting viewpoint that holotype-allotype need not be distinguished, and he uses "paratype" as applying to any specimen found to be identical with the "type"!! No figures given.

46. Freeman, T.N. "A New Generic Assignment for Archips fumiferana (Clemens), the Spruce Budworm." Canadian Ent., vol. 79, p. 21. Feb. 1947. Well-known economic pest placed in genus Choristoneura Lederer, reasons to be given in later paper.

47. Freeman, T.N. "The External Anatomy of the Spruce Budworm, Choristoneura fumiferana (Clem)". Can.Ent., vol. 79, pp. 21-31, 10 figs. Feb. 1947. A portion of a Ph.D. thesis. Describes external morphology of this tortricid, with 10 clear drawings, showing the structures described. References included.

48. Gabriel, A.G. "A New Species of Phasis (Lepid. Lycaenidae) from South Africa." The Entomologist, vol. 80, pp. 60-61. Mar., 1947. Phasis dicksoni n. sp. from Cape Province described in detail. Types in Brit. Museum.

49. Haggett, L.G. "Lepidoptera Taken at Light at Arundel in 1945-1946." The Entomologist, vol. 13, pp. 97-101. May, 1947. List 249 spp. of moths taken at light in England and gives general observations.

50. Haydak, Mykola H. "Rearing Clothes Moth and Black Carpet Beetle in the Laboratory." Journ.Econ.Ent., vol. 40, pp. 278-280. Apr. 1947. Describes technique, food mixtures, etc. used for large-scale rearing of Tineola biselliella Hum. and the beetle.

51. Hedges, A.V. "A List of Manx Lepidoptera." The Entomologist, vol. 80, pp. 44-46, 62-66, 89-94. Feb., Mar., Apr., 1947. From the Isle of Man, lists 170 spp., including 16 butterflies.

52. Jenks, G.E. & Kay McKay, "Ugly Duckling," Natural History (N. Y.), vol. LVI, pp. 306-309, Sept., 1947. 13 fine photos showing life cycle of Tussock Moth, Hemerocampa vetusta Bois.

53. Lempke, B.J. "Bena prasinana (Lep.): Another Nomenclatorial Difficulty." The Entomologist, vol. 80, pp. 128-132, pl. II, figs. 3,4. June, 1947. Corrects misapplication of Linnaeus' name, under which bicolorana Fuessley falls as a synonym, because no one had bothered to go back and read the original description carefully.

54. McDunnough, J. "The Agrotid Genus Agrotiphila Grt. and its Genotype." Can.Ent., vol. 79, pp. 38-39. Feb. 1947. Careful back-checking of type material in British Museum results in synonymizing Agrotimorpha Benj. under Agrotiphila Grt. (without front prominence) and resurrecting Orosagrotis Hampson (distinct frontal prominence). Grote thought the genotype specimen to be montana Morr., but was actually colorado Smith. Also surmises from figure of female genitalia that subgenus Menada Kozh. is synonym of Orosagrotis. Also transfers churchillensis McD. from Agrotiphila to Euxoa.

55. Moeck, A.H. "A New Subspecies of Speyeria atlantis (Edwards) from New Mexico (Lepidoptera: Nymphalidae)." Ent.News, vol. 58, pp. 73-75, 4 photos. March, 1947. New race described from north-central New Mexico. Description regrettably brief and differences from race nausicaa of Arizona seem rather slight. Details of data of type series presented well. Clear photos of both surfaces of holo- and allotype given. Primary types taken in copula. The new race was named dorothea.

56. Needham, J.G. "A Moth Larva that Lives on Fern Spores (Lepidoptera; Heliodinidae)." Proc.Ent.Soc.Wash., vol. 49, pp. 165-166. June,1947. Careful description of nest and habits of Erineda elyella Busck feeding on spores of fern Acrostichum aureum in Fla.

57. Remington, P.S. "Notes on the Type Locality of Speyeria egleis secreta dos Passos and Grey." Ent. News, vol. 58, pp. 99-100. Apr. 1947. Corrects careless labelling of original collector of secreta, records exact type locality, and gives additional records of occurrence. A clear proof of the necessity of including accurate data with all specimens collected.

58. Richards, A.G. "Studies on Arthropod Cuticle. I. The Distribution of Chitin in Lepidopterous Scales, and its Bearing on the Interpretation of Arthropod Cuticle." Annals Ent.Soc.of America, vol. 50, pp. 227-240. June,1947. For some years Dr. Richards, enthusiastic Lepidopterist and insect physiologist, has carried on a campaign to correct the old textbook characterization of insect (and other arthropod) cuticle as "a chitinous exoskeleton". He concludes that the cuticle is actually "a plasticized protein sheet...subdivided by...waxes...and chitin". The present paper records results of analysis of scales of 109 species of Lepidoptera in 103 genera of 45 families. His table shows that scales of 3 species contained no chitin, scales of half the species were largely chitin, and the others had lesser amounts. Black scales were always chitinous. Fore wing scales were chitinous more often than hind wing scales. Marginal scales were more often chitinous than wing center scales. Iridescent scales were always non-chitinous while non-iridescent scales contained chitin in Morpho and all other iridescent species except Chlorippe seraphina Hbn. Newly developed scales in the pupal wing have no chitin even when strongly chitinous in adult wing. McDunnough checklist followed in listing of species.

59. Stallings, Don B. & J.R. Turner, "Notes on Kansas Butterflies with Description of a New Subspecies." Journ. Kansas Ent.Soc., vol. 20, pp. 93-94. July, 1947. Report Amblyscirtes oslari and Glaucopsyche lygdamus as residents of Barber Co., Kansas. Kansas lygdamus described as new subspecies G. lygdamus jacki. Described in detail and distinguished from all other races, but no photograph given. Primary types retained in authors' collection!

60. Sugden, J.W., A.M. Woodbury, & Clyde Gillette "Notes on Migrations of the Painted Lady Butterfly in 1945." Pan-Pacific Ent., vol. 23, pp. 79-83. Apr. 1947. Dispersal northward flights in Utah previously reported by one or all of these authors in 1924, 1930, 1931, 1935, and 1941. Flight of 1945 in Utah was less than 1941 and in California, greater than 1941. During the six migrations observed in over 20 years the height of flight in Utah varied from March 30 to May 8. The 1941 flight oviposited on all thistles in the route. The 1945 flight did not, since it was too early for the thistle plants. A valuable field study.

61. Wind,R.G. & H.K. Clench, "The Genus Callictita (Lepidoptera,Lycaenidae)". Psyche, vol. 54, pp. 57-61. Mar. 1947. New Guinea genus with one species, three races, one C. cyara arfakiana described as new and apparently well worth naming.

BRIEF BIOGRAPHIES

5. Charles Valentine Riley (1843-1895)

An eager, talented English boy, winning prizes at school for his artistic yet accurate drawings of butterflies, was to become several decades later one of America's most distinguished entomologists. Charles Valentine Riley was born near London on September 18, 1843, and educated in England, France, and Germany. At the age of 17 he came to the United States and settled on a farm in Illinois. His great interest in insects opened many opportunities for scientific observations even while he worked as a farmhand, and this knowledge provided a background for his position four years later on a prominent Chicago agricultural journal, The Prairie Farmer, as reporter and editor of the entomological section. In 1868 he was appointed State Entomologist of Missouri, a position in which he served capably for ten years. When the grasshopper plague of 1873-77 swept over the Great Plains, Riley was commissioned director of the government committee to study and plan the control of the pests. In 1878 he accepted the post of entomologist in the U.S. Bureau of Agriculture. He was an able administrator and admirably organized the Division of Entomology as its first chief. One of his most ardently pursued projects was the establishment of state and federal agricultural experiment stations. At length, in 1894, because of poor health, he resigned from active government work in order to spend the remainder of his life on his own research.

Because of his inquisitive nature, keen observation, and clear writing, C.V. Riley holds a lasting position of honor in American entomology. Goode reported that Riley published the astonishing number of over 1600 papers! The famous nine Missouri Reports on destructive insects are filled with thorough descriptions and life histories, of which Darwin wrote that he was "struck with admiration". He studied the habits, biology, and morphology of insects in many orders, and abundantly illustrated his papers with his own excellent drawings. By depositing his extensive collection, he established the Insect Department of the U.S. National Museum, and became its honorary curator. He also founded the Entomological Society of Washington. The French government awarded him the Legion of Honor medal for his aid in the study and control of grape phylloxera.

Riley's active interest in butterflies and moths probably stemmed from his acquaintance as a boy with W.C. Hewitson, noted English Lepidopterist. He collected and drew these insects even then, and later in America undertook investigations of habits and biology in many groups of Lepidoptera; for example, he discovered the carnivorous habits of the larvae of Feniseca tarquinius. Although not a "systematist", he did describe new genera and species in several families of moths. One of his most extensive observations was on the Yucca moths, Pronuba and Prodoxus, and on the Yucca borer, Megathymus. His constant emphasis on the importance of habit and life history studies is illustrated by the excerpt from one of his speeches quoted on p. 50.

It was an ironic tragedy and inestimable loss to entomology that at the age of 52, less than a year after Riley resigned from formal duties to pour his full energies into research, he was injured in a bicycle accident and died within a few hours. Thus ended suddenly a brilliant and potentially more productive career.

Jeanne E. Remington

Erratum: for "September" in line 3, paragraph 2, page 50, read "August".

Changes and Corrections to Holland's Moth Book - 1.

by Dr. A.E. Brower

Nomenclature of insects is not yet in the stabilized condition so many uninitiated collectors seem to expect. Name changes must sometimes be made, due to the accumulation of new specimens, the application of new methods of taxonomy, careful study of older literature, and correction of careless earlier work. The Moth Book by Holland has been and still remains the most valuable book the American amateur collector can obtain. Consequently a series of corrections of the identifications for specimens in the fine plates will appear in the NEWS. The following is the first in this series. This list gives the right names for all the Catocala figures which are misnamed, as accurately as these correct names can be determined from the figures:

Plate	Fig.	Name Given	Correct Name
XXXI	8	C. retecta	C. luctuosa Hlst.
	11	C. flebilis	C. augusi form lucetta Hy.Edw.
	14	C. obscura	C. residua Grt.
XXXII	4	C. groteiana	Looks like C. briseis Edw.
	5	C. carolina	C. flebilis Grt.
	6	C. relicta	C. relicta form clara Beut.
	7	C. " var. bianca	C. relicta Wlk.
	12	C. amatrix	C. amatrix form selecta Wlk.
	13	C. " var. nurus	C. amatrix Hbn.
	19	C. lineella	C. amica form curvifascia Brower
XXXIII	1	C. californica	Looks like C. irene Behr
	2	C. ultronia	C. ultronia form celia Hy.Edw.
	4	C. celia	Near typical C. ultronia Hbn.
	6	C. meskei?; fig.8 of augusta is like C. meskei	
	8	C. augusta	Looks like pale C. mariana Stkr.
XXXIV	7	C. osculata	Is near typical C. ilia Cram.
	13	C. polygama	C. mira Grt.
	16	C. verrilliana	C. ophelia Hy.Edw.
XXXV	2	C. similis	C. similis form aholah Stkr.
	3	C. aholah	C. similis Edw.
	5	C. jaquenetta	Looks like C. blandula Hlst.
	7	C. praeclara	C. sordida Grt.
	13	C. stretchi	Looks like C. mariana Stkr.
	14	C. cleopatra	Prob. form of nevadensis Beut.
	15	C. rosalinda	Looks like C. faustina Stkr.
	18	C. babayaga	" " C. arizonae Grt.
XXXVI	7	C. hermia	Prob. form of nevadensis Beut.

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Members probably will find it useful to make these corrections on the explanation pages beside the plates or to copy the corrections and interleaf them next to the proper plates. - Ed.

COLLECTING TRIPS

William Hovanitz, of the University of Michigan, spent an interesting summer in search of Colias in the Far North. He collected in the Peace River country, McMurray, Ft. Smith, Yellowknife, Dismal Lakes region, and Coppermine.

L.P. Grey and Dr. A.E. Brower of Maine and A.C. Frederick of Albany, New York, accompanied by his son Arthur and Myles Abbot, an amateur photographer, left Grey's home in Lincoln, Me., on the first of August, and, via Van Buren, Maine, and Campbellton, N.B., arrived that night at Cascapedia, on the Gaspé peninsula. The next day they went by jeep into the Shicshock Mts., some 50 miles in the interior, near the headwaters of the Cascapedia river. Here they obtained, among other things: a small dark strain of Speyeria atlantis (abundant); S. cybele, subsp. nr. novascotiae (rather common); Plebejus saepiolus insulanus (not rare, but worn); Polygonia gracilis (not rare). Interestingly enough, no Glaucopsyche lygdamus (couperi) were seen, this apparently being more typical of the north coast. On August 3rd they went on to Bathurst, N.B., and in the salt meadows near the town collected a nice series of freshly emerged Lycaena dorcas dospassosi and a few Coenonympha tullia nipisquit, the latter just beginning to emerge.

Editor Clench was happy to meet two Lep. Soc. members, L. R. Rupert, of Horseheads, N.Y., and Douglas Ferguson, of Halifax, Nova Scotia. They spent a day here in Cambridge, studying Plagodis specimens at the Agassiz Museum of Harvard, before going on to Martha's Vineyard to do some collecting.

Robert G. Wind, of Livermore, Calif., spent some time up in the Sierras, and reports among his other captures, the rather unusual record of Strymon adenostomatis taken at 8000 feet.

Before his departure for Michigan, editor Clench did some midsummer collecting in the Blue Hills Reservation, near Boston, and found the butterfly situation much improved after the poor spring. He wrote: "I have never in my life seen such an abundance of Theclinae around here." He took 94 hairstreaks in two days, the five species being Mitoura damon and Strymon falacer, edwardsi, melinus, and titus. He later visited L.P. Grey in Lincoln, Maine.

INSECT PIN LABELS

The Sherwood Press, Dryden, N.Y., publishers of The Coleopterists' Bulletin, are offering labels set in 4 point type, printed in strip of about 30 labels on heavy ledger bond, at the low price of

500 for $ .50 or 1,000 for $ .75.

The label may be 1-4 lines.

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Lep. Soc. members who have done much exchanging of papered specimens undoubtedly have been bothered by the task of writing out full data labels for all the material obtained. Too few specimens are received in exchange from any one locality to have labels printed. Great mutual time-saving will result if strips of labels are sent with papered material sent in exchange. A few collectors have done this for years, and it would reduce some of the drudgery of developing a collection if this became universal. Of course, there are always some specimens from localities from which less than 400-500 are taken, and labels are then impractical.

NOTICES BY MEMBERS

PAPILIOS of the MACHAON group desired. Offering in exchange Lepidoptera of any groups from Calif. and Ariz. Also larvae and pupae of the machaon group are desired. David L. Bauer, P.O. Box 469, Yuma, Ariz.

WANTED: Satyridae of the genus Minois from all parts of North America, esp. M. damei. Exchange or examination, for purposes of a revision. Ralph L. Chermock, Dept. of Biology, Univ. of Alabama, University, Ala.

WANTED: N. Am. butterflies, all groups. Buy or exchange. Have many rare N. Am. and tropical spp. I particularly desire arctic material. Robert G. Wind, Rt. 1, Box 145, Livermore, California.

FOR SALE. Eight glass-topped wood insect cases, 12 x 16 x 2½", very slightly used. $40.00. Roderick R. Irwin, 1005 S. Bloomington St., Streator, Illinois.

You are invited to place your name in the Scientists' Directory. Names classified and listed by groups and covering all lines of nature and science, amateur and professional. No charge for listing. SCIENTISTS' DIRECTORY, Box 1344, Hartford 1, Connecticut.

* * * *

IF YOU BUY, SELL, OR DETERMINE MATERIAL SENT TO YOU FOR DETERMINATION, put your name in the SERVICE DIRECTORY. This covers specimens, equipment, and supplies for nature lovers and scientists. Box 1344, Hartford 1, Conn.

I have FOR SALE a large no. of NOCTUIDAE from Fla. and Colo., pinned and papered, complete data, and most named. Must dispose of these promptly and will make attractive price for quantity orders. List of spp. sent on request. Expect soon to have Catocala and other Lepid. from Wisconsin. Have also specimens from Chicago area, freshly pinned and spread, for exch. Alex K. Wyatt, 5842 N. Kirby Ave., Chicago 30, Illinois.

PAPILIONIDAE from all parts of the world. Wanted for exch. or purchase. In N.Am. material I need: Pap. philenor acauda, asterius americus, asterius stabilis, brevicauda gaspeensis, brevicauda bretonensis, bairdi, bairdi hollandi, bairdi brucei, nitra, nitra kahli, machaon aliaska, machaon hudsonianus, machaon dodi, indra pergamus, indra minori, pilumnus. Parnassius all except clodius, smintheus, sayi, hermodur. Carl Cook, Crailhope, Kentucky.

A new Insect Breeding Cage, cylindrical in four sections with optional plastic or screen observation chambers, for sale. Literature free on request. Bio-Metal Associates, P.O. Box 346, Beverly Hills, Calif.

WANTED, for exchange or purchase, butterflies of the genus Philotes of the world. Rudolf Mattoni, 242 Lasky Drive, Beverly Hills, Calif.

LEPIDOPTERA from the Park Land belt and coniferous forest of western Canada for sale or limited exchange. Paul F. Bruggeman, R.R. 1, Furness, Sask., Canada.

Arthur D. Hall of Nova Scotia has now disposed of the English butterflies offered in the "August" NEWS.

The editors of the NEWS wish to express their gratitude for the notices announcing establishment of the periodical which have been placed in two of the American published journals by their editors. The Annals of the Entomological Society of America gives complete information on page 317 of the June number. The Entomological News has a similar notice on page 111 of the April number. To Dr. A.W. Lindsey and Dr. R.G. Schmieder, editors of these publications, we send our heartiest thanks. Ross Arnett also has been helpful to the NEWS with his Coleopterists' Bulletin.

Several Lep. Soc. members tried to obtain the Englehardt Aegeriid monograph we reviewed in the June NEWS and found the government stocks exhausted. We regret this very much. Unfortunately, this paper was published several months before the NEWS was established. Future government publications should be available for some time after our reviews of them.

We are still getting some copies of the NEWS returned to us, because the subscriber moved, and did not notify us of his new address. It is important that we know of your new address at the earliest opportunity. You will get the NEWS on time, and we will be saved needless work and expense.

Dr. Ralph W. Macy, Reed College, Portland, Oregon, is preparing a book on the history, biology, classification and study of butterflies for a New York publisher, and asks for the assistance of Lep. Soc. members. He needs especially: information on habits, time of flight, etc., of all our butterflies; 35 mm. Kodachromes of butterfly life histories or other biological material dealing with butterflies; black-and-whites of any such material. Credit will be given for any information and/or photographs used, and those photos not used will be returned. The publisher will pay for all photos used.

For members of the Lep. Soc. who are also Coleopterists, the Coleopterists' Bulletin subscription is $1.00 and the address is: The Sherwood Press, Dryden, N.Y.

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The "August" NEWS (p.45) contained a note on the new breeding cage. It is manufactured by R.H.T. Mattoni, a Lep. Soc. member, and we suggest that all Lepidoptera breeders write for the free descriptive literature on these useful cages. Mr. Mattoni promises that a number of items of value to Lepidopterists will soon be marketed. If the prices and workmanship are good, he is assured of support from the Lep. Soc. Note the Bio-Metal adv. in the Exchanges section of this issue.

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The responsiveness of the NEWS readers has been demonstrated well already. Several members who placed items in the notice section were almost swamped by replies, and one member asked us to delete his notice since he was overwhelmed. Psyche also sold to members a large number of reprints as listed in the July NEWS.

THE LEPIDOPTERISTS' NEWS is the monthly newsletter of The Lepidopterists' Society. Membership in the Society is open to anyone interested in the study of butterflies and moths. The dues are $1.00 per year, and the NEWS is sent to all members. Please make checks and money orders payable to: Charles L. Remington, Treas. Address all communications to P.O. Box 104, Cambridge 38, Massachusetts.

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Insects

The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P.O. Box 104, Cambridge 38, Massachusetts
•
Edited by C. L. REMINGTON and H. K. CLENCH

SMITHSONIAN INSTITUTION
SEP 15 1949
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NATIONAL MUSEUM

Vol. I, No. 6 October, 1947

THE ANNUAL MEMBERSHIP LIST

Accompanying this issue of the NEWS is the list of members of the Society, giving addresses and special interests. The purpose of issuing the list now instead of December is to make it available for maximum use during the exchanging season.

The preparation of this list permits an analysis of the growth of the Society during its six months of existence. A total of 199 individuals or institutions now receive the NEWS. Of these, 191 are regular members of the Society and the other 8 are libraries or organizations. 169 members are from the U.S.A., 14 are from Canada, and 8 are from countries outside of North America. This year these 8 are all recipients of gift subscriptions from friends in the U.S.A., and in view of the dollar shortages in Eurasian countries we hope many more American members will make available such subscriptions in the approaching year.

A survey of the distribution of the North American members indicates the regions in which the Society needs much better representation. The east and west coasts each provide a number of members, but there are surprisingly few from the central states and the Southeast. It is not reasonable that there are no representatives of such well-populated central states as Minnesota, Iowa, Nebraska, Indiana, West Virginia, and Oklahoma, and none from the Dakotas, Arkansas, or Louisiana. We hope during the next year we will also find many new members from the "Deep South". South Carolina and Alabama are not represented at all, and there are certainly many more Lepidopterists in Florida and other southern states. In addition to the 12 states mentioned above, the Society still lacks Delaware, Montana, Idaho, New Mexico, Nevada, and Alaska. Canada is also very poorly represented, with only 14 members, none in British Columbia, Alberta, or New Brunswick, among the non-Arctic provinces.

A gratifyingly large number of members responded to the request for names of Lepidopterists, when they filled out the membership slips. From these names has come a large part of the Society's members. Now we are asking you to continue to try to increase the Society rolls in the following way: Look through the List of Members and note which of your correspondents have not yet joined the Society. Then jot their names and addresses on a postal card or letter and mail them to us as soon as convenient. A mention of the Society and the NEWS in your letters to these correspondents will also help. This is your Society and enlarging the membership will mean an improvement in the NEWS and other Society activities since there will be more individuals sharing the costs and contributing material.

(cont. on p.62)

Members will be interested to know that arrangements are being considered which will produce the NEWS by a clearer and more satisfactory process than mimeographing. Regular printing would raise the cost (and your dues) considerably, so this will not be used. We feel that it is important to keep the dues as low as possible. Nevertheless any reproducing process other than mimeographing will be more expensive. So if you are interested enough to keep the NEWS at its present size with a small increase or no increase in dues, we hope that all of you will give wholehearted support to a drive to double the membership for 1948.

Some of you have already been enthusiastic in helping us reach more interested people. J.W.Adams asked for a number of extra membership slips and letters and personally saw to it that several new members were added. Lloyd M. Martin is responsible for our having such a large list for California. A.K. Wyatt and several others have made special efforts. Don Eff knew that we needed to have Wyoming and some other states represented so he saw to it that we got a Wyoming member. We know that many others of you will respond similarly now that you are aware of the need of increased membership.

"Such facts (as of finding from breeding experiments that different colored "species" were actually one species)* ought to give impetus to the rearing of insects; for though the artificial method of making species out of every little individual variation may be very amusing to those who choose to indulge in it, yet such work will never give us a natural system, and much of it will have to be undone by subsequent investigators who acquaint themselves with the adolescent as well as the perfect forms of a species."

C.V.Riley, in Canadian Entomologist, 1871.

*Parenthetical words ours--Ed.

LIVING PUPAE AVAILABLE

We are delighted to announce the following two responses to the editorial on offering live pupae in the August NEWS (see also the Schroeter notice on p. 71):

Platysamia cecropia cocoons	- 10¢ each
P. cecropia X P. rubra hybrids cocoons	- 15¢ each
Automeris io cocoons	- 15¢ each

or exchanged for papered specimens to add to my collection.
E.A. Ferguson, 1213 Bellflower Ave., S.W., Canton 4, Ohio.

---

92 living chrysalids of Papilio troilus (from Michigan) to trade with other Lep. Soc. members for either moths or butterflies, preferably cocoons or chrysalids.
The Hynes Family, 152 Meachem Ave., Battle Creek, Michigan.

Western Lepidopterists, in particular, can insure great pleasure for themselves and families next spring by having emerge the eastern species they normally see only as dead specimens. What about some westerners offering living pupae?

6. The Lepidoptera of New York and Neighboring States, Primitive Forms, Micro-lepidoptera, Pyraloids and Bombyces.*

by William T. M. Forbes

This is the handbook and reference work for most workers on the micro-lepidoptera of the northeastern states. An extraordinary amount of information has been assembled on their technical characters, early stages, biology, food and distribution. Keys to families, genera and species and 439 figures of important characters make this work constantly valuable to the professional and amateur alike. Dr. Forbes has endeavored to make this treatise usable throughout by the general student of moths. The most apparent characters have been regularly used in the keys and descriptions, but of course a microscope is necessary for many details of work on the micros.

Pages 7-33, introducing the book, contain the author's carefully-reached viewpoints on several subjects, such as taxonomy, variation (with numerous examples of types of subspecific variation), phylogeny, distribution, and structure. These viewpoints have stood the test of nearly thirty years, most being perfectly valid in the light of much newer studies. Forbes' species is: "A group of individuals separated from all others by tangible characters, breeding freely among themselves, but not with other individuals."

A separate key to the females of the Eucosminae is given. Larval and pupal keys to the families and notes on many larvae are included, with some information on the habits and general distribution. Finally there is a food plant list enumerating the species feeding on each plant. For the genera Lithocolletis and Gracilaria the addition of synopses of the food plants offers the easiest means of identification in these difficult genera. The sections dealing with the Nepticulidae and Lithocolletis were prepared by Annette F. Braun and the genus Coleophora by Carl Heinrich.

Shortcomings in this work are apparent throughout to the specialist. The most important can be said to be due to a lack of knowledge at the time Forbes wrote. The magnitude of the field to be covered, the difficulty of classifying many of the genera, and the lack of any knowledge concerning the early stages of many species make impossible a complete manual. One could wish that for the sake of convenience Forbes had followed more closely the check lists of American Lepidoptera. Some keys need to be corrected more closely. In the Phycitinae and some other groups the number of species to be found in the Northeast which were omitted makes the treatment of these groups unsatisfactory. Genitalia are required to identify many species and these are omitted.

The present volume deals with all Lepidoptera except the Sphingidae, the Geometridae, the Noctuoidea, and the Rhopalocera. The report that the section dealing with the remainder of the moths is about to be published is welcome to North American Lepidopterists.

A.E. Brower

*Published June, 1923, as Memoir 68 of the Cornell University Agricultural Experiment Station, Ithaca, New York. 729 pp., 439 figs. Listed at $3.50 by Fiedler, 31 East 10th St., New York 3, N.Y.

62. Agenjo, R. "Catalogo ordenador de los lepidópteros en España." Graellsia (Madrid), vol. 4, pp. unnumbered - 13 pp. in June, 10 in August, "1946." (to be cont.) (In Spanish). Gives list of higher categories, superfamilies, and families of Spanish Lepidoptera, followed by a mere list of species in each family, with Micropterygidae (incl. Eriocraniidae), Hepialidae, Adelidae, Psychidae, Heterogynidae, Aegeriidae, Thyrididae, Cossidae, Limacodidae, and Epipyropidae, thus far. Rec'd in U.S.A. Sept. 2, 1947.

63. Chin-ien Luh, "A List of Butterflies from Southern Yunnan". Journ. of the West China Border Research Society, vol. 15 (B), pp. 20-27. 1945. An annotated checklist of new material from southern Yunnan containing 74 spp. (Hesperiidae - 1, Pieridae-23, Papilionidae-11, Amathusiidae-1, Danaidae-10, Satyridae-2, Nymphalidae-20). 18 spp. are new records for China and 70 spp. are new records for Yunnan. Footnote also lists 63 spp. from Kunming, with 5 additional new records for China and 33 new for Yunnan. Full data given in checklist. References at end of paper.

64. Clarke, J.F. Gates "Notes on Oecophoridae, with Descriptions of New Species." Journ.Washington Acad.Sci., vol. 37, pp. 2-18. Jan. 15, 1947. Supplements author's revision of the family (1941). Describes as new: Agonopteryx dammersi (S.Calif.), Martyrhilda isa (Man.), Depressaria constancei (N. Calif.), D. betina (Wash.), D. schellbachi (Ariz.), D. moya (N.Calif.), D. besma (Wash.), D. thustra (Wash.). Finds genus name Paratheta Meyr. a homonym of Paratheta Lower and renames Meyrick's genus Pseudotheta, with same genotype, Paratheta syrtica Meyr. Synonymizes Meyrick's Depressaria endryopa under Agonopteryx fulva (Wals.). Sinks Meyrick's D. sciapoda under Agonopterix pallidella (Busck), and Meyrick's D. nymphidia and D. corystopa under D. alienella Busck. Removes genera Garrha Walker, Hoplomorpha Turner, Thema Walker, Phryganeutis Meyrick, and Atheropla Meyrick from synonymy. Places Borkhausenia aciculata Meyrick and Paratheta astigmatica Meyrick in genus Anoncia (Cosmopterygidae). Gives distribution, life history, and host plant notes on numerous oecophorids. Figures made of female genitalia of all n.spp. except isa, which was figured in 1941 as M. sciapoda.

65. Clarke, J.F.Gates "A New Eucosma from the El Segundo Sand Dunes" (Olethreutidae). Bull.So.Calif.Acad.Sci., vol.46, pp. 51-53, pl.11. June 12, 1947. Describes as new Eucosma hennei, reared from larvae taken by Chris Henne. Male and female genitalia figured.

66. Clarke, J.F.Gates "Notes on, and New Species of, American Moths of the Genus Filatima Busck" (Gelechiidae). Journ.Wash.Acad. Sci., vol. 37, pp. 263-275, 21 figs. Aug. 15, 1947. Describes as new: Filatima procedes (Tex.), F. betulae (Mass.), F. golovina (S.Calif.), F. tridentata (S.Calif.), F. vaniae (Utah), F. perpensa (N. Calif.), F. sperryi (Calif.), F. vaccinii (N.J.) F. platyochra (S.Calif.), F. virgea (Tex.), F. spinigera (S.Calif.), F. obidenna (Ariz.). Figures female genitalia of all except perpensa, sperryi, and spinigera, and male genitalia of all n. spp. Moves Gelechia bimaculella Cham. to Fascita, and G. frugalis Braun, G. prognosticata Braun and G. shastella Gaede to Filatima. Sinks F. clarkella Busck under F. shastella.

67. Comstock, John A. "A Few Pests of Sunflower in California." Bull. So. Calif. Acad. Sci., vol. 45, pp. 141-144, pls. 15-18. Jan. 10, 1947(1946). Notes on life-history of Stibadium spumosum Grt. (Phalaenidae) in flower heads, Chlosyne lacinia (Nymphalidae) on leaves, and Suleima baracana Kft. and S. helianthana Riley (Phalaenidae) boring in stems, with excellent photos and drawings of larvae and pupae of spumosum and pupae of lacinia.

68. Comstock, John A. "Phlegethontius rustica Fabr. in California." Bull.So.Calif.Acad.Sci., vol. 45, pp. 145-147, pls. 19,20. Jan.10, 1947(1946). Brief notes on occurrence in S. Calif., where it feeds on Chilopsis,an unrecorded host plant. Clear photos of larva and pupa.

69. Comstock, John A. "Notes on the Early Stages of Eucosma hennei Clarke," Bull.So.Calif.Acad.Sci., vol. 46, pp. 53-54, pl. 12. June 12, 1947. (See under Clarke, above). Brief description only of color of larvae, of some structures of pupa. Pupa figured. Species bores in stems of Phacelia.

70. Comstock, John A. "Giant Lilies of the Desert." Quarterly, Los Angeles County Museum, Vol. 6, No. 2, pp. 12-16, 4 photogs. Summer, 1947. Interesting historical notes on Joshua Tree, with authoritative popular notes on its borer, Megathymus yuccae navajo and photos of latter's pupa and L.M. Martin digging out a borer. Mentions that true generic name of yucca moth is Tegeticula Zeller, which has priority over Pronuba Riley.

71. Darlington, Emlen P. "Notes on certain types of Lepidoptera described by Brackenridge Clemens." Trans. Am. Ent. Soc., vol. 73, pp. 85-104. July 16, 1947. Reports on a critical examination of Clemens collection at the Acad. of Nat. Sciences of Phila., validating still remaining types of moths other than Tineidae and Crambinae, the latter validated previously by Busck and Haimbach, respectively. Darlington discusses 10 Sphingidae, 1 Saturniidae, 3 Arctiidae, 5 Limacodidae, 1 Megalopygidae, 4 Zygaenidae, 1 Thyrididae, 16 Pyralidae, 60 Olethreutidae, and 31 Tortricidae. Types of only 39 of these 132 spp. are still unknown. In several cases Darlington adds his own notes on the species in question. Specimens of two of C.T. Robinson's tortricid spp. (synonyms of Clemens' spp.) designated as lectotypes.

72. dos Passos, Cyril F. "Erebia youngi Holland, Its Subspecies and Distribution". (Satyridae). Am.Mus.Novitates, no. 1348, 4 pp. July 14, 1947. On basis of studies of type and other material, dos Passos concludes that there are three races of E. youngi recognizable; typical, in the Yukon River basin; E. youngi herscheli Leussler, in the MacKenzie basin; and E. youngi rileyi n. ssp., in the Alaskan range (type locality-McKinley Park, Alaska). New race named on basis of types and 15 prs. of paratypes. Apparently consistent genitalic characters, as well as pattern distinguish the races. Complete references given throughout.

73. Dufrane, Abel "Papilionidae". Bull. & Ann.Soc.Ent. Belgique, vol. 82, pp. 101-122. "1946". On Papilionidae of many parts of the world, describing as new: Papilio martensi (Belgian Congo), "P. polydamas cubensis subsp. nov." ("Cuba"),"P. polyxenes asterius Cr.-f. subamplicata f. nov." (Temple, Pa.,U.S.A.), P. glaucus

73. Dufrane(cont.) canadensis ab. deficiens("U.S.A. without precise locality"!), P.troilus ab. flava("Pocono Monta,Pa.,U.S.A."), ab. obliterata("U.S.A. without precise locality"!) and ab. berioi ("Pocono Monta,Pa.,U.S.A."), and ab. addenda ("Pocono Monta,Pa., U.S.A.") and at least 75 other new aberrations and 11 new forms. A terrifying paper. The aberration-namers of the U.S.A. may be passé, but foreign activity seems accelerated, if anything.

74. Evans, W.H. "The Correct Name for Spialia sertorius Hoffmansegg (Lep. Hesperiidae)." The Entomologist, vol. 80, p. 167. July, 1947. Evans, a leading skipper authority, proves fairly well that Hemming is in error in considering "S. hibiscae (Hübner)" the correct name for the insect which should be known as S. sertorius, since Hübner's hibiscae only reached the proof stage, was never published, and was actually rejected by Hübner, himself. Same is true of alchmyllae Hemming, a synonym of Carcharodus floccifera Zeller. C. altheae (Hübner) is a homonym of altheae Esper and also falls under floccifera.

75. Fullaway, D.T. "Niihau Insects." Proc.Hawaiian Ent.Soc., vol. 13 pp. 51-53. May, 1947. In list of insects from this small island off Kauai are 11 moths, some, such as Celerio lineata, also common U.S.A. spp.

76. Kirkpatrick, T.W. "Notes on a species of Epipyropidae (Lepidoptera) parasitic on Metaphaena species (Hemiptera:Fulgoridae) at Amani, Tanganyika." Proc. Roy.Ent.Soc.London (A), vol. 22, pp. 61-64. 16 June 1947. The moth larvae attach to the fulgorid leaf hoppers and feed only on the wax secreted, not puncturing the integument, but the host dies shortly after the larva leaves to pupate. Eggs of one moth, all laid in one day, continue to hatch, a few a day, for at least a year! 2000-3000 eggs laid per female.

77. Knaben, Nils "Amphitrota suecica Auriv. (Lep. Noct.) fra B ø verdalen i Norge." Norsk Entomologisk Tidsskrift (Oslo), vol.7, pp. 185-186. "1946" (In Norwegian).

78. Kozhantshikov, I.V. "On systematic of genera of Anarta-group (Lepidoptera, Noctuidae) in relation to ecology and geographic distribution of the species Anarta." Revue d'Entomologie de l'Urss (Moscow), vol. 29, pp. 12-35, 5 figs. (Russian, with English summary). Includes key to the Anarta group: Anartomorpha, Ala, Oxytrypia, Hypsophila, Anarta, Sajanie, Panolis, Pseudanarta, Sympistoides, Sympistis, Lasionycta, Lasiestra, Polia, Hadena, Parastichtis, Crino. All genotypes listed. Describes as new: Anarta militzae from South Altai and Hypsophila meinhardti from Pamirs and Tian-Shan. Notes that primitive spp. of Anarta have narrow host requirements, in the Fagales and Rosales (and some Ericaceae), whereas the specialized spp. are only on Ericaceae. But Monima, Polia, and Hadena have similar requirements to most typical Holarctic insects, feeding on Salicales, Fagales, Rosales, Compositae, Gramineae, Ranunculaceae, and Umbelliferae. He believes most arctic Anarta, Sympistis, and Polia originated in the mountains of central Asia, while arctic Lasionycta and one Anarta and Polia originated in America and Scandinavia.

79. Miscellaneous workers, in "Minutes, Notes, and Exhibitions", Proc. Hawaiian Ent. Soc., vol.13, pp.1-31. May,1947. Various Lepidoptera notes:-- Achaea janata (L.) new record on Lanai; larvae stripping Ricinus bushes on Hawaii. Scotorythra paludicola (Butl.) on Acacia on Maui. S. paludicola defoliating koa, Tristania, Grevillea on Maui, heavily attacked by parasite and birds. Parasitic fly and wasp reared from Vanessa cardui (L.) on Oahu. Amyna natalis (Walk.), new immigrant moth on Oahu breeding on Sida, Abutilon, Waltheria. Heavy infestation on Oahu of Hymenia recurvalis (Fabr.) on Sesuvium and Batis. Polydesma umbricola Bois. damaging Samanea and rose on Hawaii and Oahu. Anacamptodes fragilaria feeding on mint. Eggs of Protoparce quinquemaculata blackburni (Butl.) on Nicotiana on Molokai heavily parasitized by Trichogramma wasps; total larval and pupal period of sphinx 56 days. Hawaiina perkinsi (Swezey), rare sphinx, reared from Euphorbia from Mt.Kaala. Gnorimoschema operculella (Zeller) reared from Physalis high in mts. Grown agrotid larva found in cave at 12,000'. Euxoa mesotaxa (Meyrick) adults found at 13,000'. Ethmia colonella (Walsing.) defoliating Cordia on Hawaii. Genophantis leahi Swezey infesting Euphorbia, parasitized by 3 wasps.

80. Opheim, M. "Hvor godt er vårt land undersøkt med hensyn til Macrolepidoptera." Norsk Ent. Tidsskr. (Oslo), vol.7, pp. 187-189. "1946". (English summary).

81. Swezey, O.H. "Elaphria nucicolora (Guenée), a Recent Immigrant to Hawaii (Agrotidae: Acronictinae)." Proc.Hawaiian Ent.Soc. vol. 13, pp. 99-100. May, 1947. Native of Fla., Tex., W. Indies, S. America. May become sugar cane pest. Listed in genus Monodes in McDunnough Checklist, but placed in Elaphria by Heinrich.

82. Swezey, O.H. "Two New Hawaiian Moths on Chenopodium oahuense." Proc.Hawaiian Ent.Soc., vol. 13, pp. 103-104. May, 1947. New spp. are: Mapsidius chenopodii(Plutellidae) and Feltia lookii both from Hawaii. Rather briefly described. Latter not certain feeder on Chenopodium.

83. Swezey, O.H."Synonymy of Two Common Moths of Stored Food Products." Proc.Hawaiian Ent.Soc., vol. 13, p. 104. May, 1947. Endrosis lactella (Schiff.) listed as synonym of E. sarcitrella (L.). Setomorpha dryas (Butl.) and S. insectella (Fabr.), both of Walsingham, listed as synonyms of S. rutella Zell.

84. Tams, W.H.T. "A new African species of the genus Fulgoraecia Newman (Lepidoptera,Epipyropidae)." Proc.Roy.Ent.Soc.London (B), vol.16, pp. 57-59, 1 pl. 16 June 1947. Describes the new moth parasitizing fulgorids in Africa (see reference above under Kirkpatrick), naming it Fulgoraecia cerolestes. Gives excellent photos of several males, the male and female genitalia, the two known hosts, and two views of the host with the parasite larva attached. Sinks the name Epipyrops as a synonym of the prior Fulgoraecia. It would seem that a new family should also be used to replace the name based on the synonym.

85. Tetley, J. "Increased Variability Accompanying an Increase in Population in a Colony of Argynnis selene (Lep.Nymphalidae)." The Entomologist, vol. 80, pp. 177-179, pl. III. Aug.1947. An important observation revealing one condition producing aberrations. "The main points of interest are: (i) that in the 15 years or so

85. Tetley (cont.)-previous to 1944 in which observations were kept on this locality not the smallest variation was noted, except for two suffused males taken in 1943; (ii) that in the very much larger wooded area, of which the locality forms a small part, no variation has been found at any time, even minor banded forms being absent; (iii) the variation was coincident with a large increase in numbers in this locality from a few dozens in earlier years to an approximate maximum total of 270-300 in each of the two years in question...; (iv) that in each of the two years there was a second brood in August, amounting in numbers to about 35-40% of the spring brood, in which not the least variation occurred; and (v) that in 1946 and 1947 the total brood was not more than one-half that of either of the earlier years and that no variation occurred." Plate shows 12 of the 36 striking aberrations taken in the small colony during the two high population years.

86. Verity, Ruggero "Descrizione ed ordinamento naturale di alcune razze del genere Anthrocera Scop. (=Zygaena F.) (Lepidoptera Anthroceridae = Zygaenidae)." Redia (Florence), vol. 31, pp. 55-83. 1946. Drops Zygaena Fabr. (1807) as synonym of Anthrocera Scopoli (1777), since both were based on A. filipendulae(L.), and thus also changed the family name, to Anthroceridae. Discusses the races of some species of the genus, describing several new ones from Europe. Sinks Thermophila as invalid subgeneric name, having as type filipendulae, same as genotype of Anthrocera.

87. Verity, Ruggero "Rassegna delle Specie Italiane della Tribu Adscitidi (= Genere Procris F. Olim)." Redia (Florence), vol. 31, pp. 123-162, pls. VI-VIII. 1946. Discusses the genera: Procris, Jordanita, and Adscita, describing various new races and forms and giving numerous photographs of male genitalia.

88. Williams, Joseph L. "The comparative anatomy of the internal genitalia of some Tineoidea (Lepidoptera, Gracillariidae-Tischeriidae)." Proc. Roy. Ent. Soc. London (A), vol. 22, pp. 8-17, 8 figs. 5 May 1947. Seeks an intermediate between the primitive "monotreme" moths (females with only one abdominal opening)and the "diplotremes", with a second opening, for copulation only. The latter is the advanced condition and is characteristic of most Lepidoptera. Present study was in search of intermediates to explain development of diplotremes, but Tineoidea are rather typical diplotremes.

89. Wind, Robert G., & Harry K. Clench "New Indo-Australian Lycaenidae." Bull.Brooklyn Ent.Soc., vol. 42, pp. 1-16. Feb., 1947. Describes as new 4 species and 8 subspecies: Candalides erinus stevensi (New Guinea), C. meeki kunupiensis (N.Guinea), C. grandissima morobea (N.Guinea), Philiris diana papuanus (N. Guinea), P. ariadne (N.Guinea), P. azula (N.Guinea), P. fulgens bicolorata (Aru Is.), P. intensa birou (N. Guinea), P. innotatus evinculis (Queensland), P. moira putih (N.Guinea), P. mayri (N.Guinea), P. misimensis (N.Guinea). Most types in M.C.Z. Unique type of bicolorata in Wind's private collection! Reduces Candalides arfaki Beth.-Bkr. as race under meeki and Philiris kurandae Waterh. as race under fulgens. Elevates P. innotatus Miskin as species distinct from ilias Feld.

PLEASE KEEP US INFORMED OF CHANGES OF ADDRESS

6. Henry Skinner (1861-1926)

Henry Skinner was born on March 27, 1861, in Philadelphia. Having acquired his early education in public schools, he attended Rugby Academy and finally the University of Pennsylvania, from which he received the degrees of B.S., and, in 1884, M.D. In 1886 he married Celia Beck and they later had two children. Although after graduation he had become busy with his medical practice he enthusiastically participated in entomological activities, especially through the Philadelphia Academy of Natural Sciences, and his interest was recognized by his election to the editorship of the two-months-old Entomological News in 1890. Another "spare-time" occupation was curating the insect collections of the American Entomological Society and the Academy, as well as collecting in most parts of the U.S.A. and Canada. Preparation of taxonomic and biological papers on Lepidoptera also shared his time. In 1901 he relinquished his medical practice and turned all of his efforts to entomology. Thus the curatorship of the Entomology Department of the Academy and the Ent. News editorship became his formal occupations. After 21 years of service as editor he resigned in 1910, while still continuing with public lecturing at the Academy, participation in organizations, and scholarly research. Having recognized the need for a national association of entomologists in one of his earliest editorials, Skinner was elected a Fellow and Vice-President of the Entomological Society of America at its first meeting, in 1906, and two years later was elected President. In 1910 he helped launch the first world congress on entomology, in the capacity of chairman of the United States committee, and went to Brussels to preside at the nomenclature section of that meeting, and continued as a member of the Permanent Committee for the congresses. In 1913 he became a member of the International Commission on Zoological Nomenclature. After a long career of enthusiastic service, Dr. Skinner died on May 29, 1926, at the age of 65.

Skinner is a familiar name to American Lepidopterists, not only in taxonomy but for alert observations of the living insects. His first paper, a short note describing the field differentiation of the sexes of Argynnis idalia, was published in 1882, while he was still in medical school. One of his larger works is the "Synonymic Catalogue of the North American Rhopalocera" (1898). His varied interests included speciation, antigeny, mimicry, and variation. Hesperiidae was his special group, and the publications on Pamphila and Thanaos are among his better-known works, including a comprehensive series of six papers on male genitalia of skippers of North America, done in collaboration with R.C. Williams, Jr.

This scientist's two outstanding contributions were his research on Lepidoptera and his editorship of Ent. News. He constantly sought improvement in content and medium of the News, such as the use of halftone and, later, colored plates. His desire was to provide material of value and stimulation for all types of readers, from beginners to specialists, and the editorials, such as those campaigning for better techniques in preparation of specimens, are filled with evidences of his ready humor, as well as acumen. In one he wrote: "We may also say, in passing, that we have coined a new word, 'Sloppydoptera', which has reference to specimens captured with a baseball bat or temporarily loaned to the new baby as playthings before being 'sent out'." The present progress of American entomological activities owes much to the wise guidance and devoted toil of men such as Dr. Skinner.

Jeanne E. Remington

NOTES FROM HERE AND THERE

P.F. Bruggemann, of Saskatchewan, wrote about the unusual feeding habits of a moth larva: an "astonishing discovery was made one August morning during the daily inspection of the farm buildings in search for Catocala. Under the eaves of the blacksmith shop I noticed an object, the perfect imitation of bird excrement. Only its impossible position prompted closer inspection, which revealed a caterpillar busily gnawing a hole into the roof board. Covering it with a small wire cage I watched its labours. On the morning of the third day it had disappeared, closing the hole with a sheet of white silk, and leaving behind a pile of small, round pellets of wood chips in the bottom of the cage. A second, similar larva found on a wall of the same building, and transferred into a rearing box, pupated. But instead of a moth there emerged the following spring an ichneumon fly of the rare genus Metopius. Nothing appeared from the other one. According to Mr. T.N. Freeman the pupa does not key out satisfactorily and my sketchy notes of the caterpillars did not give a satisfactory clue. So the identity of these wood-boring caterpillars remains a mystery."

* * * * * *

S.B. Smalley reports a list of 80 spp. of butterflies taken around Cincinnati from 1933 to 1945. This is not an unusually large list, but it is remarkable that he has reared 45 species from egg to adult, including Calephalis borealis (muticum?), Libythea bachmanii, Mitoura damon, and a number of skippers. We hope he saved the pupal skins.

* * * * * *

MORE ON SPHINGIDAE OVER WATER

In the Ozarks of Missouri I saw sphinx moths, Haemorrhagia, strike the muddy water of an upland pond on at least two or three occasions. Near the farm buildings this pond was used by hogs and other stock. I was unable to decide whether the moths were after water or the reflection they might see, but probably the latter. - A.E.Brower

* * * * * *

Dean F. Berry, of Orlando, Florida, has obtained Phoebis philea by placing an Acacia plant near the Hibiscus flowers to which passing females are attracted. The females oviposit on the Acacia and Mrs. Berry covers the Acacia with netting to rear and retain the adults.

* * * * * *

A copy of the Bulletin of the So. California Academy of Sciences, recently received, lists the following memoirs of interest to Lepidopterists:

Vol. 1. 1938. "Check List of the Lepidoptera of Canada and the United States of America; Part 1; Macrolepidoptera", by Dr. J. McDunnough. Paper cover.....$4.00.

Vol. 2, Pt. 1. 1939. Part 2 of the same Check List - "Microlepidoptera". Paper cover.....$2.50.

Pt. 2. 1944. "Revision of the North American Genera and Species of the Phalaenid Subfamily Plusiinae (Lepidoptera)", by Dr. J. McDunnough. .....$1.50.

These are all available to members of the Academy for half price. Academy membership dues are $5.00 per year, including subscription to the Bulletin.

NOTICES BY MEMBERS

Available now: Living pupae (cocoons) of Actias selene, long-tailed Indo-Australian saturniid. Reared locally under netting, free from parasites. Otto H. Schroeter, 613 Williams Street, New London, Conn.

PAPILIOS of the MACHAON group desired. Offering in exchange Lepidoptera of any groups from Calif. and Ariz. Also larvae and pupae of the machaon group are desired. David L. Bauer, P.O.Box 469, Yuma, Ariz.

WANTED: Satyridae of the genus Minois from all parts of North America, esp. M. damei. Exchange or examination, for purposes of a revision. Ralph L. Chermock, Dept. of Biology, Univ. of Alabama, University, Ala.

WANTED: N. Am. butterflies, all groups. Buy or exchange. Have many rare N. Am. and tropical spp. I particularly desire arctic material. Robert G. Wind, Rt. 1, Box 145, Livermore, California.

I have FOR SALE a large no. of NOCTUIDAE from Fla. and Colo., pinned and papered, complete data, and most named. Must dispose of these promptly and will make attractive price for quantity orders. List of spp. sent on request. Expect soon to have Catocala and other Lepid. from Wisconsin. Have also specimens from Chicago area, freshly pinned and spread, for exch. Alex K. Wyatt, 5842 N. Kirby Ave., Chicago 30, Illinois.

PAPILIONIDAE from all parts of the world. Wanted for exch. or purchase. In N.Am. material I need: Pap. philenor acauda, asterius americus, asterius stabilis, brevicauda gaspeensis, brevicauda bretonensis, bairdi, bairdi hollandi, bairdi brucei, nitra, nitra kahli, machaon aliaska, machaon hudsonianus, machaon dodi, indra pergamus, indra minori, pilumnus. Parnassius all except clodius, smintheus, sayi, hermodur. Carl Cook, Crailhope, Kentucky.

A new Insect Breeding Cage, cylindrical in four sections with optional plastic or screen observation chambers, for sale. Literature free on request. Bio-Metal Associates, P.O. Box 346, Beverly Hills, Calif.

WANTED, for exchange or purchase, butterflies of the genus Philotes of the world. Rudolf Mattoni, 242 Lasky Drive, Beverly Hills, Calif.

LEPIDOPTERA from the Park Land belt and coniferous forest of western Canada for sale or limited exchange. Paul F. Bruggeman, R.R. 1, Furness, Sask., Canada.

GEORGIA LEPIDOPTERA offered in exchange for Lepidoptera from other parts of U.S.A. or foreign countries. H. W. Eustis, Woodbine Road, Augusta, Georgia.

WISH TO TRADE "The World Of Plant Life" (722 pp.) by C.J. Highlander for McDunnough's Macrolepidoptera Checklist-1938. My copy is like new. Elias A. Ferguson, 1213 Bellflower Ave., S.W., Canton 4, Ohio.

PLEASE INFORM US PROMPTLY OF CHANGES OF ADDRESS

IMPORTANT NOTICE TO MEMBERS

The SEASON SUMMARY outlined on page 49 of the September NEWS will be moved ahead to the December issue. Please see that individual reports are received by L.M. Martin, J.D. Eff, J.C. Hopfinger, or the NEWS editor BY NOVEMBER 20. Reports are especially needed from the mid-western and southeastern states. The September issue was mailed much later than expected and as a consequence it is necessary to give more time for preparation of reports. All members who were able to spend time in the field this season are urgently requested to participate in making this first Season Summary a success.

Two foreign Lepidopterists' societies are known to us thus far. "La Société Lepidopterologique de Genève" (Geneva, Switzerland) was founded in 1905 and after its fortieth anniversary in 1945 it decided to become "La Société entomologique de Genève", expanding its scope. As a Lepidopterists' society it published a bulletin and had issued several parts of a series on Swiss Lepidoptera.

The second organization is the new "Nippon Lepidopterological Society" (see Ent. News, vol. 57, pp. 19-20), founded in 1945 and publishing "Transactions". In addition, Zephyrus, an excellent entomological journal published by the Entomology Dept. of the Kyushu Imperial University, Fukuoka, Japan, is devoted entirely to Lepidoptera.

EIGHTH INTERNATIONAL CONGRESS OF ENTOMOLOGY

The Eighth Congress will be held in Stockholm, Sweden, from August 8 to 15, 1948. These Congresses are the only meetings attended by large numbers of entomologists from all parts of the world. The sessions of the Congress are devoted almost entirely to papers read by many of the world's greatest entomologists. During the coming sessions it is probable that a large portion of the papers will be read in English. Some papers on Lepidoptera are always on the program. In view of the demand for transportation it is necessary to arrange for passage as early as possible.

In a few cases we have been informed of copies of the NEWS being received with one side of a page printed upside-down, or not printed at all. We are glad to replace such defective sheets, but members needing replacements should notify us soon after discovering the error. The supply of extra pages is quite limited. A postal card from you will bring a replacement promptly.

THE LEPIDOPTERISTS' NEWS is the monthly newsletter of The Lepidopterists' Society. Membership in the Society is open to anyone interested in the study of butterflies and moths. The dues are $1.00 for 1947, and the NEWS is sent free to all members. Please make checks and money orders payable to: Charles L. Remington, Treas. Address all communications to: P.O. Box 104, Cambridge 38, Massachusetts.

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Insects

The Lepidopterists' News

SMITHSONIAN INSTITUTION
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Edited by C. L. REMINGTON and H. K. CLENCH

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There has always been a tendency for Lepidopterists to segregate themselves from other entomologists, often with the result that they fail to apply advancement of other phases of entomology (and zoology) and lose the balanced approach necessary to good scientific work. A primary aim of the Lep.Soc.,through the NEWS, is to reduce this barrier.

In North America there are several local entomological societies holding regular meetings and in some cases publishing their own general journal. There is one correlating society, THE ENTOMOLOGICAL SOCIETY OF AMERICA, which has members from all parts of the continent. Lepidopterists should be aware of its existence, its functions, and its activities. It is hoped that all Lep.Soc. members devoting much time to entomological research will want to become members of the E.S.A. if they have not yet done so. A short account of the history and activities of this Society will help to acquaint Lep. Soc. members with it.

THE ENTOMOLOGICAL SOCIETY OF AMERICA was organized in 1906 as a result of a spontaneous demand, and under the leadership of Prof. John H. Comstock, Dr. William Morton Wheeler, Dr. L.O. Howard, Dr. Henry Skinner, J. Chester Bradley, and others. By the end of its first year the Society had over 400 members and had Professor Comstock as its first president. Dr. Skinner, noted Lepidopterist, was elected Second Vice President and became President two years later. In order to recognize the achievements of its members it established three classes of membership - Honorary Fellow, Fellow, and Member. Of the seven original Honorary Fellows, two, Dr. Samuel Hubbard Scudder and William Henry Edwards, were Lepidopterists. Election to this class is the highest honor American entomology can bestow. Apparently no other Lepidopterists have been so recognized, there being none among the twelve living Honorary Fellows. Five charter members of the Lep. Soc. were charter members of the E.S.A. Thirteen Lep.Soc. members are Fellows of the E.S.A.

THE ENTOMOLOGICAL SOCIETY OF AMERICA now has two primary activities other than recognition of accomplishment. It publishes one of the finest entomological journals in the world - its Annals, with Dr. A.W. Lindsey as editor. And it holds an annual meeting composed of paper-reading sessions and a business meeting. This year the meeting will be held in Chicago in conjunction with the American Assoc. for Advancement of Science from December 27-30. All Lep. Soc. members in the vicinity of Chicago are urged to attend the sessions, to be held in the Congress Hotel. Lep. Soc. members who wish to join the E.S.A. should write immediately to the NEWS editor for a membership form so that they may be elected to membership at the December business meeting. The annual dues are $5.00 and bring a subscription to the valuable Annals.

SUMMARY OF "SOME PRINCIPLES OF CLASSIFICATION IN LEPIDOPTERA, WITH SPECIAL REFERENCE TO THE BUTTERFLIES", BY B.C.S. WARREN.*

This patient exposition of a generally confusing and confused subject should be read by all Lep. Soc. members, but cannot, of course, be reproduced here in its entirety. However a summary is presented of the first two installments. Succeeding parts are not yet published, but the meat of Warren's arguments is probably given in these two issues.

Warren's oft-stressed attack is against DETAILED definitions of categories above genus. He maintains that "large numbers of valid characters do not exist. Actually the more fundamental the group, the fewer the characters; so that in superfamilies and families there most frequently are no more than one or two characters indicative of relationship, or of any real classifactory value." Analyzing definitions in modern works, he concludes that all characters used fall into one of three types: (1) The true diagnostic character - constant throughout the unit, either present or clearly secondarily lost; (2) the complementary character - a feature or combination found only in the unit, but not constantly; (3) the false, or worthless character - having no recognizable frequency and not confined to the unit alone. Applying these methods of characterization, Warren presents the following grouping in the Lepidoptera:

Suborder HOMONEURA (both pairs of wings with identical neuration)
Suborder HETERONEURA (neuration of fore and hind wings differing)
  Super-family- Group I (wings coupled by frenulum)
  Super-family- Group II (wings coupled by humeral lobe of secondaries)
    Superfamily HESPERIOIDEA (neuration unbranched)
      Family HESPERIIDAE
    Superfamily PAPILIONOIDEA (neuration branched)
      (A) Primitive family-group (fore legs functional in both sexes)
        Family PAPILIONIDAE (claws simple)
        Family PIERIDAE (claws bifid, eggs elongated)
        Family LYCAENIDAE (claws bifid, eggs not elongated)
      (B) Advanced family-group (fore legs degenerate only in male)
        Family RIODINIDAE (palpi short)
        Family LIBYTHEIDAE (palpi very long)
      (C) Specialized family-group (fore legs degenerate in both sexes)
        Family NYMPHALIDAE (specialization of fore legs not constant in either sex)
        Family DANAIDAE (specialization of fore legs constant in female)
        Family SATYRIDAE (specialization of fore legs constant in both sexes)

Under NYMPHALIDAE he includes the subfamilies: Acraeinae, Argynninae, Heliconiinae, Melitaeinae, Limenitinae, Nymphalinae, Euthaliinae, Morphinae, and Amathusiinae (including tribes Brassolidi and Hypolimnidi).

The complementary characters listed for these groups come mainly from the neuration and the pupal suspension and freedom of movement. The suspension of the pupa seems hardly a fundamental character having evolutionary significance. Warren's treatment is conservative and the general grouping apparently sound, but his rebellion against the multiple-character definitions of higher categories seems to have rebounded too far in the other direction. Surely it will not discourage workers from continuing investigations of larvae (see A.H.Clark, NEWS p.52,#39), pupal structures, adult body structures other than appendages (see Kiriakoff, NEWS p.78,#108), and other approaches to fundamental classification.

C.L.R.

*From The Entomologist, vol.80, pp.208-217, 235-241, -; Sept., Oct., - , 1947.

7. The Butterflies of North America by William Henry Edwards*

Edwards' great classic very likely will never be equalled for superbness of style and color plates, because it is doubtful that anyone will be willing to go to the great expense required. Edwards himself remains the leader among American butterfly students in the amount of time given and in the value of his contributions. His three-volume work was the pinnacle and fruition of his diligent devotion over a great many years. It is deeply to be regretted that the book is unavailable to nearly all Lepidopterists because of its prohibitive cost.

The text is a series of chapter-like accounts of one species of butterfly after another. Each species is thoroughly described in the adult, with careful descriptions of the egg, larvae, and pupa if known. Then follows the engrossing discussion of habits, habitat, and results of breeding experiments. The text alone would provide exciting reading for any enthusiastic Lepidopterist with some field experience. Many of the field notes are quoted from letters written by the great collectors of the day, especially Mr. David Bruce. The high mountain butterflies of the genus "Chionobas" (=Oeneis) were of particular interest both to Edwards and to Bruce. Under C. oeno (=lucilla), Bruce is quoted thusly: "The butterflies played around me and apparently fought for a position,- a jutting point on the edge of the snow. On this they would walk a few inches in their jerky manner, stop a few minutes and begin an almost imperceptible gliding, then stand quiet a moment, and walk again - about which time a rival would appear, and the usual skirmish in the air would ensue; and I generally improved the occasion by catching both of them. .. For shelter during storms they return to the mountain verge. I once took quite a cluster of them in a crevice under a huge overhanging rock where I had taken refuge during a furious hailstorm. .. It is found, as I have said, at the highest points attainable and is common; yet from frequenting such inaccessible localities, collectors have not often collected it." At another point, regarding C. brucei, Bruce had written: "There are few or no birds at these high stations to destroy the larvae or catch the butterflies, but mice, ground squirrels, spiders, and predaceous beetles are legion. Parasitic diptera and ichneumon flies are as numerous as on the lower levels; a large gray Asilus, too, is ever present like an evil spirit, capturing Brucei without the least effort. It is, therefore, surprising that so frail a butterfly should hold its own so persistently." Edwards was also primarily interested in Papilio and the relationships of named "species" which could be brought out by rearing. He proved P. marcellus, telamonides, and walshii to be seasonal forms of P. ajax (=marcellus). He once travelled all the way from West Virginia to Colorado on the crude railroads of the time expressly to rear large numbers of the offspring of P. bairdii and P. brucei females, and his results if carefully reviewed now would surely result in the recognition of these entities as races of the same species - suggested as machaon by Edwards himself.

The beautiful plates are the finest feature of the great work. Of the 101 plates in volumes I and II, 98 were executed by Mrs.Mary Peart, "with a fidelity to nature that cannot be surpassed." 100 of these were colored by Mrs. Lydia Bowen and her sister Mrs.Leslie,both of whom had served originally with the bird artist, John J. Audubon. The 51 plates for volume III are mostly the work of Edward A. Ketterer. C.L.R.

*Published by Houghton, Mifflin, & Co., Philadelphia, New York, and Boston. Pages unnumbered. Vol.I- 1868; vol.II- 1874-84; vol.III- 1887-97. 41 parts in all. 152 colored plates. Available from John D.Sherman, 132 Primrose Ave., Mt. Vernon, N.Y. for $100.00.

Erratum:On p.52, item #36, in lines 9 & 12 "guasca" should be "quasca".

90. Bell, E.L., "A Catalogue of the Hesperioidea of Venezuela." (see #35, p. 52). Copy kindly sent the NEWS by Mr. Bell. This paper should be useful for any work with American Hesperiidae. The 3 American subfamilies are characterized in some detail. Genotypes all are designated, specifically noted as Orthotype, Haplotype, Logotype, Diatype, or Pseudotype. English system of venation numbering used. Each of the 155 genera is characterized. The entire known distribution of the 409 species, races, and forms is given. Of course the complete references to original descriptions are always given, with additional references of papers having figures and of papers giving Venezuela records. An index to names is the final section. A mimeographed list prepared by Mr. Bell corrects a very large number of typographical errors due to his having had no opportunity to correct a galley proof.

91. Birkett, N.L. "Observations on Drepana binaria in North Lancashire". The Entomologist, vol. 80, pp. 161-164. July, 1947. This moth apparently is spreading its range northward. Larvae on mature leaves did well. Larvae on tender second-crop foliage all died.

92. Blackwelder, Richard E., "The Dates and Editions of Curtis' British Entomology." Smithsonian Misc. Coll., vol. 107, no. 5, 4 plates. 12 June 1947. Attempts to date accurately the reprinted, revised edition of this important 1824 book, to aid in correct selection of genotypes, etc. Following Lepidoptera genera concerned: Lycaena, Deilephila, Eyprepia, Bupalus, Dendrolimus, Peronea, Sarrothripus, Gastropacha.

93. Brandt, William,"A new Ocnogyna Species from N.E. Iran", Entomologisk Tidskrift (Stockholm), vol. 68, nos. 1-2, p.90. 1947.

94. Carpenter, G.D.Hale "A new subspecies of Papilio dardanus Brown." Proc.Roy.Ent.Soc.London (B), vol.16, pp. 55-56. 16 June 1947. A distinctive race, apparently restricted to the isolated Mount Kulal in Kenya, characterized by strongly yellow antennae and named: P. dardanus flavicornis.

95. Carpenter, G.D.Hale "The geographical distribution of the forms of the African Nymphaline butterflies Charaxes etesipe Godart and Ch. penricei Rothschild." Trans.Roy.Ent.Soc.London, vol. 98, pp. 91-104, 2 pls., 7 figs. 2 July 1947. Concludes that the two "species" are actually one and that Comoro Is. and Madagascar races arrived there after separation of these islands.

96. Chang, S.C. "A Redescription of Ailantus Arctiid Mouth(Eligma narcissus Cram. Lepid. Arctiidae)."(All in Chinese). Entomologia et Ars (Wukung, China), vol. 1, pp. 5-9, 55-56. 5 figs. Apr., Aug., 1946.

97. Clarke, J.F. Gates, "A New Dichomeris from Eastern United States (Lepidoptera, Gelechiidae)." Proc. Ent. Soc. Washington, vol.49, pp. 187-189. Oct.1947. D. glenni described from Putnam Co., Ill. Known also from Florida, Kansas, and Michigan. Male and female genitalia figured. Named for M.O. Glenn, collector of the type.

98. Collenette, C.L. "The Identity of Phalaena chrysorrhoea, Linnaeus, 1758." Bull.Ent.Research, vol. 38, pp. 259-261. Aug., 1947. Carefully reviews evidence and concludes that Linnaeus' name must apply to the Brown-tail, as generally accepted, and not the Gold-tail as maintained by Rothschild (1917).

99. Cripps, C. "Scent perception in some African Myrmecophilous Lycaenidae." Proc. Roy. Ent. Soc. London (A), vol. 22, pp. 42-43. 16 June 1947. Several remarkable cases indicating highly developed scent perception in butterflies and ants. Ovipositing females apparently find proper host plant by scent. Ants appear to know their myremecophilous larvae by scent and parasites of the lycaenid larvae emerge and leave the ant nest unmolested, probably because they have acquired the key odor from the larvae. Larvae of the Blue Neochrysops (sev. spp.) are carried down into the ant nest for maturing and pupating.

100. Evans, R. Tenniel, "East African Butterflies." Journ.East Africa Nat. Hist. Soc., vol. 19, pp. 18-39, plates I-IV. June, 1946. Takes up continuation of van Sommeren's list of Kenya and Uganda butterflies. This part covers Pseudoneptis, Catuna, Pseudargynnis, Pseudacraea, and Neptis, with key to spp. of Neptis. 41 photos of specimens.

101. Franz, Herbert, "Die Landtierwelt der Mittleren Hohen Tauern." Denkschriften AK. Wiss. Wien (Austria), vol. 107, 552 pp., 14 plates. 1943. Ecological study of animals of one range of W. Austrian Tirol. Pp. 144-207 covers 966 spp. of Lepidoptera.

102. Freeman, T.N., "The Taxonomic and Economic Approach to an Entomological Problem." 77th Ann. Rep't Ent. Soc. Ontario (1946), pp. 8-9. 1947. Instructive review of biological aspects of Budworm, Archips fumiferana complex, revealed in intensive studies of Canadian Gov't agencies, proving in this case museum taxonomy cannot give the answer to species separation without prior biological work with living material.

103. Freeman, H.A., "New Skipper Records for the United States." Ent. News, vol. 58, pp. 184-186. July 1947. New U.S.A. records (all from Pharr, Texas) are: Aguna asander form panthius, Pellicia costimacula, Gergythion begga pyralina. Summary of all his new U.S.A. skipper records lists 6 as probable residents and 11 as strays. Records of actual breeding are the next important step.

104. Gardner, J.C.M. "On the larvae of the Noctuidae- III." Trans. Roy.Ent.Soc. London, vol. 98, pp. 59-90, 34 figs. 2 July 1947. Deals with his "Division B" of the family - contaning most genera of the Catocalinae and Noctuinae, some Acontiinae, and the Erastriinae, Plusiinae, and Hypeninae. Larval evidence removes Chasmina, Androlymnia and Elydna from Acronyctinae. Descriptions, keys, and figures, continuing previously reported studies on this family.

105. Golding, F.D. "Further Notes on the Food-Plants of Nigerian Insects, VI." Bull.Ent.Research, vol.38, pp. 75-80. May, 1947. Continuing earlier lists, gives host plants of 3 Nymphalidae, 1 Lycaenidae, 1 Hesperiidae, 1 Arctiidae, 10 Noctuidae, 3 Lymantriidae, 4 Sphingidae, 3 Notodontidae, 1 Geometridae, 1 Saturniidae, 4 Lasiocampidae, 11 Pyralidae, and other insects.

106. Jackson, T.H.E.,"The early stages of some African Lycaenidae." Proc. Roy. Ent. Soc. London (A), vol. 22, pp. 44-48. 16 June 1947. Describes rather tersely the egg, larva, pupa, and records host of Capys catharus Riley, Epitola crippsi Stoneham, Deudorix odana Druce, Deamerona Ploetz, Stugeta olalae Stnhm., Spindasis sp., Axiocerses harpax Fabr., Athene sobrina Talbot, and A. lamias Hewitson. The 2nd, 4th, 6th, and 7th spp. are tended by ants, with A. harpax apparently unable to feed on plants and living in the ant runs on some sort of concentrate excreted or produced by the ants.

107. Kiriakoff, S.G., "Taxonomie intraspécifique dans ses appricationsaux Lépidoptères." (In French). Bull. & Ann. Soc. Ent.Belgique, vol. 82, pp. 209-224. 1946. A clear statement of a code for nomenclature below species (subspecies, race, variety, form, seasonal form, etc.), closely agreeing with our viewpoint, as emphasized in the NEWS in every issue. Accepts as nameable:geographic race and biological race, treated as trinomials. Seasonal, sexual, and individual variants should not be named. If they are, they have no standing or protection under the International Rules. Then gives a code for naming these variants: placing the Latin name in brackets. We have asked M. Kiriakoff for an article on this subject for the NEWS and hope to present it soon. Otherwise we will give a more detailed translation of this paper.

108. Kiriakoff, S.G., "On the systematical position of the lepidopterour family Hesperiidae." 13th Biologisch Jaarboek, Dodonaea, 1946, pp. 288-292. Agrees with most recent authors in discarding the "suborder Rhopalocera" for skippers and butterflies. Considers the skippers far removed from butterflies (PAPILIONOIDEA). Apparently accepts suborders FRENATA and JUGATA, dividing the former into the "cohors STEMMATONCOPODA" (PYRALIDOIDEA, etc., having "crowned prolegs" in the larva) and the "cohors HARMONCOPODA" (PAPILIONOIDEA, higher moths, having harmoncopodous prolegs). On the basis of this character Kiriakoff places the skippers in the STEMMATONCOPODA. He considers the tympanal organ (ear) a superfamily character and thus places the PTEROPHORIDAE and THYRIDIDAE in the superfamily HESPERIOIDEA, to be placed near the PYRALIDOIDEA (PYRALIDIDAE only). If true, the contentions of this paper need to be developed much more before acceptance can be assured.

109. Le Moult, E.,"Études préliminaires sur le genre Apatura s. str. (Lep. Nymphalidae)." Miscellanea Entomologica (Paris), vol. 43, pp. 58-75. Oct. 1946. Describes as new: A. clytie s.-sp. juno (n. France and Belgium) and its "f. ind. marginejuno" (n.France), A. clytie s.-sp. carueli (Ukraine) and its "f.ind.marginecarueli" (Ukraine), A. clytie s.-sp. bernardii (Siberia) and its form mandschurica (Manchuria) and "f. ind. fabreae" (Siberia & Manchuria), A. ilia s.-sp. minerva (n. France & Belgium) and its "f.ind.pseudoserarum" (Berlin) and "f. hybride fulvopuncta" (n.France), A.ilia s.-sp. asturiensis (n. Spain), A. ilia s.-sp. russica (Russia), A. ilia s.-sp. orientalis (Manchuria), A.serarum s.-sp.szechwanensis (Szechwan), A. serarum s.-sp. phaedra f. pseudilia (China), A. serrarum s.-sp. yunnanensis (Yunnan), A. serarum s.-sp. extensa

109 (cont.) (Yunnan), A. metis s.-sp. oberthuri (Russia) and its "f. hybride intermedia" (Russia), A. metis s.-sp. asiatica (Siberia & Manchuria) and its forms ind. pseudohere (Manchuria) and obscura (Manchuria), A. metis s.-sp. lavernoides (Tibet), A. metis s.-sp. monardi (Yunnan), A. gertraudis s.-sp. mirei (Manchuria), A. gertraudis s.-sp. japonica (Japan), A. iris s.-sp. iris "f.ind. obscurior" (Germany), A. iris s.-sp. moriei (China) and its "f.ind. obscuremoriei" (China). The paper seems a thorough muddle, taxonomically.

110. Lichy, R., "Document pour servir à l'étude des Lépidoptères du Venezuela (3e. note)." Bol. Ent. Venezolana, vol. 5, pp. 1-13. 1946.

111. Lichy, R., "Documents pour servir à l'étude des Sphingidae du Venezuela (Lepid. Heter. 8e. note)." Bol. Ent. Venezolana, vol. 5, pp. 15-26. 1946.

112. Moss, A. Miles, "Notes on the Syntomidae of Para, with Special Reference to Wasp Mimicry and Fedegosa, Heliatropium indicum (Boraginaceae), as an attractant." The Entomologist, vol.80, pp.30-35. Feb. 1947. Pleasant account of wasp-mimic syntomids and their attraction to Fedegosa, an amazing insect lure.

113. Munroe, Eugene G., "Four New Pieridae from the West Indies." Am. Mus. Novitates, no. 1362, 5 pp. 4 Nov. 1947. Describes as new: Phoebis (Aphrissa) orbis subsp. browni, P. statira subsp. hispaniolae, Eurema (Abaeis) nicippiformis, and E. (Pyrisitia) euterpiformis, all from Hispaniola. Descriptions are detailed, comparative, and in all cases accompanied by genitalic analysis. References given. P. orbis browni named for F.M. Brown, reviser of Phoebis.

114. Opheim, M., "Nye funn og finnesteder for Macrolepidoptera." Norsk Ent. Tidsskr. (Oslo), vol. 7, pp. 190-192. "1946" (In Norwegian).

115. Price, Geoffrey C., "Chrysophanus phlaeas in Egypt" (Lycaenidae). Bull.Soc.Fouad Ent. (Cairo), vol. 30, p. 77. 1946. Records typical phlaeas for first time. C. phlaeas coerulea-basalis Andres described from western Egypt in 1930.

116. Rehfous, Marcel, "Note sur Hyalina albida" (Psychidae). Mitt. Schweiz. Ent. Gesell. (Geneva), vol. 20, pp. 211-216. Nov.9,1946.

117. Romei, Enzo, "Glaucopsyche lysimon and Cupido minimus." Ent.Record & Journ. Variation, vol. 59, pp. 99-100. Sept. 1947.

118. Romieux, Jean, "Nouvelles Observations sur quelques Sesies" (Aegeriidae). Mitt. Schweiz. Ent. Gezell., vol. 20, pp. 225-231. Nov. 9, 1946.

119. Romieux, Jean, "Notice sur la progression de l'Arachnia levana en Suisse occidentale" (Nymphalidae). Mitt. Schweiz. Ent. Gezell., vol. 20, pp. 262-264. Nov. 9, 1946.

120. Schepler, Fritz, "Nydansk sommer fugl, Rhyacia fugax Tr." Entomologiske Meddelelser (Copenhagen), vol.25, pp. 150-152, 1 fig. 1947. (In Danish).

121. Sevastopulo, D.G., "The Early Stages of Indian Lepidoptera. Pt. XVII." Journ. Bombay Nat. Hist. Soc., vol. 46, pp.575-586. Apr. 1947. Early stages of some species in several families of Rhopalocera and Heterocera.

122. Snodgrass, R.E., "The Insect Cranium and the 'Epicranial Suture'." Smithsonian Misc. Coll., vol. 107, no. 7, 52 pp., 15 figs. 30 July 1947. See note on page 82.

123. van Someren, V.G.L., "Comments and additional notes on Professor Carpenter's paper entitled 'Notes on Charaxes (Lep.Nymphalidae) in the Hope Department of Entomology, University of Oxford!" Proc.Roy.Ent.Soc.London (B), vol.16, pp. 53-54. 16 June 1947. A few comments on Carpenter's paper, one transferring "female form ethalionoides Carp." to ethalion from etheocles.

124. Vasquez, Leonila, "Papilios nuevos de Mexico." (In Spanish). Annales Inst. Biologia (Mexico), vol. 18, pp. 249-256, 5 photos. 1947. Describes as new P. pharnaces male form paucimaculata (Guanajuato), P. erostratinus (Puebla), and redescribes P.erostratus West, with photos of all.

125. Williams, C.B., "The Generic Relations of Species in Small Ecological Communities." Journ. Animal Ecology (London), vol. 16, pp. 11-18. May, 1947. Sets out to determine whether large natural communities have more or less intra-generic competition than small communities of plants and animals. Concludes that there are more species per genus in a small community than in a random sample of the same size from a larger community. Therefore natural selection operates in favor of more than one species per genus rather than for one species per genus, since competition and resulting selection are present between all species of a given group in a small community. Williams uses the Lepidoptera of Wicken Fen, Hertfordshire, and the British Isles among his examples.

126. Williams, Joseph L., "The Anatomy of the Internal Genitalia of Fumea casta Pallas (Lepidoptera : Psychidae)." Trans.Am.Ent.Soc., vol. 73, pp. 77-84, figs. 1,2. 16 July 1947. This European species is established in the U.S.A., with a strong colony around Boston, Mass., and another in the Morris Arboretum in Philadelphia. Present paper describes and figures clearly the internal genitalia (male and female) of this psychid, comparing it with three other psychids covered in an earlier paper (1944). Psychidae are diplotremes, like all the higher Lepidoptera (see above).

127. Woodhouse, L.G.O., "Observations on species of Nacaduba Moore, and some other Lycaenidae from Ceylon." Proc.Roy.Ent.Soc. London (B), vol.16, pp. 3-9, 12 figs. 13 Mar. 1947. Gives notes on these lycaenids supplementary to the Woodhouse & Henry book: "The Butterfly Fauna of Ceylon", and figures the male genitalia of twelve species. Records Nacaduba olyetti and Horaga albimacula viola, not previously listed from Ceylon, considers Celastrina puspa felderi and C. lilacea to be one species on Ceylon.

128. Wright, Albert E., "Acentropus niveus, Oliv., in North Lancashire." Ent.Record & Journ.Variation, vol. 59, pp. 100-101. Sept. 1947.

7. John Bernhard Smith (1858-1912)

John B. Smith was born in New York City on Nov. 21, 1858, and attended public schools and law school. After four years of law practice he decided in 1884 to respond to the insistent demands of his scientific interests, and therefore accepted a position as special agent for the U.S. Dep't of Agriculture, under C.V. Riley. During his two years in the Dep't he spent most of his time on field research. In 1886 Smith transferred to the National Museum as assistant curator of insects. Three years later he accepted a professorship at Rutgers College, where he taught entomology for 23 years. Rutgers awarded him an honorary Sc.D. At his death on March 12, 1912, after an illness of many months, he left a wife and two children.

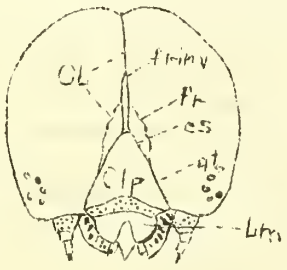
As were C.V.Riley, Henry Skinner, and other great entomologists of that generation, Smith was enthusiastically active in many organizations which were developing at that time. He held membership and often an official post in the American Association for the Advancement of Science, The Entomological Society of America, the New York Academy of Sciences, and numerous other scientific organizations, and was honored by election as a Fellow of the three above-named societies. For several years previous to 1885, he was editor of the young Bulletin of the Brooklyn Entomological Society (it was then devoted entirely to Lepidoptera and Coleoptera), and when this publication merged with Papilio in 1885 he became editor of the resulting journal, Entomologica Americana, for five years. When the state agricultural experiment stations were founded, due to the efforts of Smith's former chief, C.V. Riley, Smith became one of the first men to be connected with the project, and later, as New Jersey State Entomologist, he also made important contributions, being among the foremost to devise and demonstrate mosquito control over large areas.

From his early life Dr.Smith always had been intensely interested in Lepidoptera, and although he did publish papers on beetles, bees, and other insects, the majority of his work was on moths. He was acknowledged as the leading authority on the huge and complex "superfamily" Noctuidae, but also among the outstanding monographic papers written while at the National Museum are: "A Monograph of the Sphingidae of North America north of Mexico", "A Revision of the Lepidopterous Family Saturniidae", and a "Preliminary Catalogue of the Arctiidae of Temperate North America". In 1893 he published an annotated catalogue of the Noctuidae of Boreal America, and the first part of a noctuid monograph, to which many additions, such as the 120-page "Revision of the Deltoid Moths" were made during subsequent years. Holland's evaluation of the noctuid catalogue, given in the Moth Book (1903), illustrates the high esteem with which Lepidopterists regarded Smith's work: "This is the most scholarly and complete work upon the Noctuidae of America which has up to the present time been published, and is indispensable to the student". Smith described hundreds of new species and many genera, such as Papaipema, Neleucania, Stylopoda, Copicucullia, and Euthyatira, and among the numerous genera revised by him were Acronycta (with H.G.Dyar) and Callimorpha. One of the few works including the whole order was a "List of the Lepidoptera of Boreal America", the original appearing in 1901 and the complete revision two years later. To the field of general entomology Smith contributed a glossary of terms used in insect study, later used as a basis for Torre-Bueno's 1937 glossary, and one of the first state checklists, that of the insects of New Jersey. He also wrote several books: Economic Entomology and Our Insect Friends and Enemies.

J.E.R.

ON THE TERMINOLOGY OF THE CATERPILLAR CRANIUM

Snodgrass' paper (see Recent Lit.#122 on p.80), stabilizing the interpretation of the topography of the insect cranium, being of considerable importance to Lepidopterists as well as other Entomologists, a brief summary of certain sections follows. The primary conclusion is: "The insect cranium is not composed of 'plates' united by 'sutures'." Most of these "sutures" are actually grooves left by formation of internal ridges. The postoccipital sulcus and the gular suture are probably true sutures. The "epicranial suture" is merely the ecdysial line of cleavage or line of weakness where the head can split for moulting. The application to Lepidoptera larvae is indicated by the following figure, copied from Snodgrass' fig. 11E, representing Malacosoma americana:



CL - ecdysial cleavage line
frinv - frontal invagination
fr - median part of frons between arms of cleavage line
es - epistomal sulcus
at - anterior tentorial pit
Clp - clypeus
Lm - labrum

* * * \

On Bruggemann's Wood-boring Larva

"Referring to note by P.F. Burggemann Page 70, the larva he found was probably that of Harrisimemna trisignata, which makes its cocoon or pupa housing in the fashion described. It feeds on Ash, Privet, and Viburnum lentago L. and probably also on Lilac. Have found and reared it on the first three."

- Alex K. Wyatt

* * * * *

All Lepidopterists primarily interested in taxonomy should read "Reflections on the Subspecies" by Professor M. H. Hatch in the July, 1947, Entomological News (pp. 168-170). We are glad to maintain that the trend in Lepidoptera taxonomy for the last few years, at least in North America, has been to study the species, rather than the subspecies (race), as the BASIC biological unit.

* * * * *

In preparing some notes on the history of the Cambridge Entomological Club recently, the NEWS editor came across the following in the Secretary's minutes for the Club meeting of 13 December 1878: "Dr. H.A. Hagen said that he had learned from Mr. W.H. Edwards that a collection of butterflies sent by the latter gentleman to Europe, and containing the types of 70 rare species of Hesperia, had been on board the wrecked steamer Pommerania, and, in all probability had been lost." The McDunnough Check List (1938) lists 103 skipper names proposed by Edwards, including synonyms. If types of 70 were lost as Hagen indicates, a serious deficiency in Edwards' reference material exists.

A number of Lep. Soc. members sent for Psyche reprints as listed in the NEWS (p. 32) and obtained some valuable reference material. The NEWS editor has recently been made aware of a bargain in good entomological literature. Although this material is principally on insects other than Lepidoptera it is advertixed here because various Lep. Soc. members have mentioned a desire for good scientific literature since they are situated far from library facilities. There is a limited number of sets of the "CONTRIBUTIONS FROM THE ENTOMOLOGICAL LABORATORY OF THE BUSSEY INSTITUTION OF HARVARD UNIVERSITY." They contain the 292 papers published by Harvard entomologists in many journals from 1909 to 1929. Altogether there are over 5800 pages, with seven large volumes well bound in red buckram and enough other unbound papers to make an eighth volume. The price is $15.00, with shipping costs extra (the set weighs about 50 lbs.). Mention the NEWS when ordering from: Mrs. M.D. Frazier, Library of Museum of Comparative Zoology, Cambridge 38, Mass.

Several Lep. Soc. members attending the November meeting of the Cambridge Entomological Club were treated to a talk by a veteran Lepidopterist, Mr. W.L.W. Field. Mr. Field informally presented his recollections of his close association as a young man with Samuel Hubbard Scudder. We joined Field in paying many visits to the aging Scudder in his private study on Brattle Street in Cambridge. (see NEWS pp. 17 & 18). All of us went away from the meeting keenly aware of the warm and enthusiastic encouragement Scudder was always ready to give to young entomologists. Mr. Field, now retired from his professional duties as Headmaster of Milton Academy, plans to continue his studies of hybridization in the butterfly genus Limenitis (= Basilarchia).

NOTES FROM A TRAVELLING EDITOR - II

Co-editor Clench extracted the former notes (see p. 42) from a letter sent him in July. A brief continuation may be of some interest.

After leaving the Boulder Co. region in Colo., we paused at the famous fossil insect beds at Florissant. In the meadows containing these beds Neominois ridingsii, Euphydryas capella, Melitaea arachne, and Oarisma garita were common and fresh (July 18).

Ephraim Canyon in Utah was an excellent collecting spot recommended to us by P.S. Remington, and we hit it (July 24) just as Hypaurotis chrysalus was emerging. Collecting a series of these gems was a real thrill. Limenitis wiedemeyeri, Plebejus rustica and icarioides, and Pieris napi were abundant. Less common were Pieris beckeri, Mitouri siva?, several Speyeria spp., Aglais antiopa, a Euphydryas, and a single battered Boloria aphirape. Bryce Canyon was barren.

The famed Sabino Canyon near Tucson was hopelessly dry and lifeless, but when we joined the Lloyd Martins in Madera Canyon in the Santa Rita Mts. a rich fauna was present. The beautiful Rhabdoides cellus was common, as were Emesis zela and other fine diurnals. However, the real feature was the night collecting. Lloyd used Dr. Comstock's old cloth-covered frame with two Coleman lanterns and we caught moths and other insects just about as fast as the several dozen cyanide tubes would knock them out. The moth fauna there has a distinctly Mexican character.

California was very disappointing during our stay (July 31-Aug.21). We covered over 3000 miles in that state alone, touching the coast at numerous points from Los Angeles to Eureka, and collecting in the Coachella Valley, San Jacinto Mts., high Sierras, the Redwood Groves, Mt. Lassen and Mt. Shasta. Everywhere the extreme dryness resulted in poor collecting. Only Habrodais grunus was common generally.

The high spot of our trip in the Northwest was a short visit with J.C. Hopfinger near Brewster, Washington. John is very near the top among the many fine collectors in the country. He has perhaps done a more thorough job in making known his virgin territory than any previous collector in any region, and he has by no means slowed down. I made a trip with John's collecting partner, Andrew Anderson, to their newest rich spot, Salmon Meadows, where the Polygonia (at least 3 spp.) were commoner than ever before in my experience. We were late (Aug.28) for Speyeria, but took some good females of a new race of S. atlantis. Neophasia menapia was surprisingly common.

We saw few Lepidoptera in Idaho, Montana, and Yellowstone Park, but the Teton Mts. were productive. We penetrated the Tetons on the WEST side, from Idaho, and found a marvelous campsite, where 2 different Polygonia, Aglais milbertii, and especially Neophasia menapia abounded. I took a fine female of menapia, my first. On Teton Pass I was elated to find two ant-tended Plebejus larvae on lupine- a thrill because of the particular attention recently given to ant-tended lycaenids (see NEWS pp. 16, 36).

We enjoyed a collecting ramble with P.S. Remington near St. Louis and took several Calephalis muticum? and Hesperia leonardus Sept. 13. While hurrying back to Cambridge, we had the pleasure of visiting Dr. Sweadner at the Carnegie Museum and Mr. dos Passos at Mendham, N.Y.

C.L.R.

NOTICES BY MEMBERS

Members are invited to contribute to this page any special requests, at no cost to the member. Unless withdrawn sooner by the contributor, each notice will be carried for three consecutive numbers. If the notice is to be continued, the contributor must again submit it, with new wording.

Available now: LIVING PUPAE(COCOONS) OF ACTIAS SELENE, long-tailed Indo-Australian saturniid. Reared locally under netting, free from parasites.
Otto H. Schroeter, 613 Williams Street, New London, Connecticut

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I have at present a very few butterflies in papers for disposal. Let me know what you want in the way of Pacific Coastal insects; I will make an effort to obtain them. I will probably be able to offer later a few pupae of Arzama obliqua. Will accept cash or what have you for exchange. Richard Guppy, R.R. 1, Marine Drive, Wellington, Vancouver Is., B.C., Canada.

I have for sale a large collection of NOCTUIDAE FROM FLA. and COLO., pinned and papered, complete data, and most named. Must dispose of these promptly and will make attractive price for quantity orders. List of spp. sent on request. Expect soon to have Catocala and other Lepid. from Wisconsin. Have also specimens from Chicago area freshly pinned and spread, for exch. Alex K. Wyatt, 5842 N.Kirby Ave., Chicago 30, Ill.

PAPILIONIDAE from all parts of the world wanted for exchange or purchase. In N.Am. material I need: Pap. philenor acauda, asterius americus, asterius stabilis, brevicauda gaspeensis, brevicauda bretonensis, bairdi, bairdi hollandi, bairdi brucei, nitra, nitra kahli, machaon aliaska, machaon hudsonianus, machaon dodi, indra pergamus, indra minori, pilumnus. Need all Parnassius except clodius, smintheus, sayi, hermodur.
Carl Cook, Crailhope, Kentucky

A new Insect Breeding Cage, cylindrical in four sections with optional plastic or screen observation chambers, for sale. Literature free on request. Bio-Metal Associates, P.O.Box 346, Beverly Hills, Calif.

WANTED, for exchange or purchase, butterflies of the genus PHILOTES of the world. Rudolph Mattoni, 242 Lasky Drive, Beverly Hills, California.

Lepidoptera of the PARK LAND BELT AND CONIFEROUS FOREST OF WESTERN CANADA for sale or limited exchange. Paul F. Bruggeman, R.R. 1, Furness, Saskatchewan, Canada.

GEORGIA LEPIDOPTERA offered in exchange for Lepidoptera from other parts of U.S.A. or foreign countries. H.W.Eustis, Woodbine Rd., Augusta, Ga.

Wanted: papered specimens of ACTIAS LUNA, AUTOMERIS IO, CITHERONIA REGALIS, & EACLES IMPIRIALIS for cash, or will exchange rare Catocala.
R.C. Casselberry, 53 Edgemont Road, Scarsdale, New York.

FOR SALE: COCOONS of Platysamia cecropia, 10¢ each; P. cecropia X P. rubra hybrids cocoons, 15¢ each; Automeris io cocoons, 15¢ each; or exchanged for papered specimens. E.A. Ferguson, 1213 Bellflower Ave., S.W., Canton 4, Ohio.

TO TRADE: 92 Papilio troilus chrysalids for Lepid., preferably cocoons or chrysalids. The Hynes Family, 152 Meachem Ave., Battle Creek, Mich.

NEW MEMBERS NOT INCLUDED IN MEMBERSHIP LIST

Braun, Miss Annette F., Salem Pike, Mt. Washington, R.R. 13, Box 41C, Cincinnati 30, Ohio. TAX. OF MICROLEP., INCL. LIFE HIST. & HABITS.

Christensen, Georg, Norrebrogade 5, Copenhagen N, DENMARK.

Crawford, Dr. John W., 109 Pinckney St., Boston 15, Mass.

Field, W.L.W., 75 Vose's Lane, Milton 87, Mass. GENETICS, ESP. IN LEPID.; MIGRATION, DISTR.

Ford, Robert J., 3266 Ardmore Ave., South Gate, Calif. RHOP. & HET. C. EX. SEASONAL COLLECTING.

Guppy, Richard, R.R. #1, Marine Drive, Wellington, B.C., CANADA. C. HET. OF N.A.

Kansas, Univ. of, Library, Lawrence, Kansas.

Learned, Dr. E.T., 542 Maple St., Fall River, Mass.

Lennox, Donald J., R.F.D. #1, Whitefield, N.H.

Oregon State College Library, Corvallis, Oregon.

Park, Dr. Francis E., 290 Cypress St., Newton Center, Mass. LEPID., ESP. OF NEW ENGLAND.

Sweadner, Dr. W.R., Curator of Ent., Carnegie Museum, Pittsburgh 13,Pa.

(CHANGE OF ADDRESS) Fauteux, J.M., 305 Mt. Auburn St., Watertown, Mass.

Add to Board of Specialists (pp. 13 & 14):

WEST INDIES
All Rhopalocera, except Hesperiidae.....EUGENE MONROE
Institute of Parasitology, Macdonald College, Que., Canada

The July, 1947, issue of Science Illustrated contained an article, "Preserve It in Plastic", depicting the most recent butterfly mounts to come to our attention.

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The Lepidopterists' News

SMITHSONIAN INSTITUTION
SEP 15 1949
NATIONAL MUSEUM

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P. O. Box 104, Cambridge 38, Massachusetts
•
Edited by C. L. REMINGTON and H. K. CLENCH

Vol. I, No. 8 December, 1947

This, the last number of Volume I, is devoted substantially to the first annual Season Summary of Lepidoptera in North America. The region was divided into eight fairly uniform faunistic areas, for each of which a general summary was compiled. This year five of the eight were summarized by an individual member within the area. In succeeding years it is planned to have all areas so treated.

In all, 43 different members participated in the reports. These are listed at the end of each area summary. Of course each of the five signed compilers provided a large share of material for the report for his area. All areas were represented, but a particularly weak response from the Southeast and Central areas decreased the significance of summaries #5 and #6. Area #1 was the most completely covered. This year three members collected extensively in the Far North and two reports, covering well-separated sections, make that area probably better covered this year than usual. Certain important gaps appear in this year's record, with the following sections missing and needing attention: Nevada, New Mexico, Idaho, Montana, the Canadian Far West, most of Texas, Oklahoma, Nebraska and the Dakotas, the entire Southeast, except Florida and Virginia, Minnesota, Wisconsin, Ontario, eastern Michigan, Iowa, most of Ohio and Pennsylvania, and Newfoundland. Eventually we hope to extend the summaries through Mexico.

A very noticeable lack of moth records shows up in a perusal of the following pages. It is hoped that moth records will be at least as numerous as those for butterflies next year, since the moths comprise a vastly larger group of the Lepidoptera.

This year some members were caught unawares or given too little advance notice of the Summary. Also, records had to be of a rather random nature and in some cases based on memory. Future participants are earnestly urged to begin keeping simple notes throughout the collecting season, with exact dates noted so that a basis for accurate comparison may be obtained after a few years and the records of the Summary may gain in value. The next Summary is planned as a supplement to the NEWS, with allowance for at least twice as much material as this year.

In these summaries an effort has been made to use up-to-date nomenclature (Limenitis, not Basilarchia or Heterchroa; Speyeria, not Argynnis; Boloria, not Brenthis; Minois, not Cercyonis or Satyrus; Sphinx, not Hyloicus; etc.). Most subspecific names have been omitted since in all American cases known to us the races are geographic. The NEWS does not use Latin names for varieties, forms, or aberrations. Authorities' names are not considered necessary for this sort of project and have been deliberately omitted.

FIELD SUMMARY OF LEPIDOPTERA - 1947 SEASON

1. SOUTHWEST- CALIFORNIA, ARIZONA, NEVADA

by Lloyd M. Martin

The early fall rains of 1946 caused many of the early species of butterflies to emerge ahead of schedule in certain localities in the Southwest. Lycaenopsis pseudargiolus echo was reported as early as Dec. 17, 1946, in La Tuna Canyon, Los Angeles Co., with Incisalia iroides out at El Cajon on Jan. 26 and with Melitaea wrightii, which usually appears in April, being taken on Feb. 24. Many species of moths that normally appear much later in the season came out very early and were gone by the first of February. From Jan. 1 to the present day has been the driest year in 64 years here in southern California with less than 3 inches of rain for most sections that normally have 15 to 20 inches. This long dry spell caused many of the local species that are usually common to hold over, possibly until next year, or until we get more rain. Bauer found Hemileuca nevadensis common at Riverside Nov.4.

In the desert, Melitaea neumogeni, Anthocaris cethura, and Euchloe creusa had a short, very early flight in late February. From late March through April very few of the desert species of butterflies, which are usually out in good numbers, appeared to any extent. In Mint Canyon the day-flying moths appeared in early March. Annaphila divinula, Xanthothrix neumogeni, Melicleptera pulcheripennis, Dysocnemis prorupta, and Euproserpinus phaeton mojave were more abundant than usual (Evans). Heid found the October desert collecting poor because of unusual dryness. Melitaea chara, Danaus strigosa, Hemiargus gyas, Brephidium exilis, and Pholisora libya were fairly common in washes, and one Apodemia palmeri was found.

Polygonus amyntas arizonensis was taken in Presidio Park, San Diego, by several collectors in unusual numbers in September. Also an unusual number of Pyrgus xanthus was taken during the season. Both of these are rare in collections. "Tharsalea hermes was much below normal at average date" (Thorne). Poanes melane, a recent arrival in San Diego Co., has become one of the commonest skippers in the county. Habrodais grunus was extremely common throughout August all over the S. California Mts.

In general, the collecting conditions were very poor in the mountain regions of California, though in some localities some good reports came in from late collecting. The High Sierras yielded Parnassius behrii, Melitaea malcolmi, Lycaena cupreus, and Papilio indra, in the early part of August. The Speyeria were not out as plentifully as usual, but several good species were taken in small numbers. Oeneis chryxus stanislaus was common on July 4. O. chryxus ivallda and Euphydryas sierra were scarce and two weeks early. Satyrium fuliginosa, Lycaena heteronea, and Melitaea hoffmanni all had a good year.

In northern California, Glaucopsyche lygdamus behrii and Plebejus maricopa emerged about a month later than usual. Colias occidentalis chrysomelas and Euphydryas editha rubicunda seemed to be fairly plentiful, but were two weeks early. Apodemia mormo langei was out in good numbers near Antioch, both males and females being taken at the normal date. E. editha bayensis was unusually rare.

(continued on next page)

1. SOUTHWEST- cont.

Southern Arizona also lacked its normal amount of rain. However, moth collecting was very good. Several very rare species were taken, such as Arctonotus terlootii, Bertholdia trigona, Gerrodes longipes, Charadra pata, Euchaetias antica and Sphinx dollii australis. So far, 250 species of butterflies and moths have been determined from the many thousands of specimens collected in Madera Canyon, Santa Rita Mts., Arizona. When the material is all determined the number of species from this one locality will come close to 600.

Around Yuma and the Gila Mts. in Arizona Bauer took several good species. Papilio rudkini and its forms have definitely been established. Anthocharis pima (which was absent in 1946) was flying in considerable numbers all through February. The majority of spring species were out in numbers, though some that have been taken in the past did not appear. Melitaea dymas, though absent in spring, was common in late summer. The migrants, Danaus plexippus, Libythea bachmanii and Vanessa cardui, arrived earlier than usual. Anthanassa texana was taken for the first time at Yuma. Bauer found the larvae of Hemileuca juno "about 75% infested with two kinds of parasitic flies and one wasp."

Only one report came in from Nevada. Hammer spent June 13th at Lehman Caves in hopes of getting Euphydryas nubigena lehmani but not one specimen was seen. Aglais milberti and Plebejus saepiolus were fresh and common. They reported the country very dry, which generally should produce many good species of butterflies and moths.

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Contributors: D.L. Bauer, J.L. Creelman, T.W. Davies, W.H. Evans, W.A. Hammer, Graham Heid, R.T. Reeves, C.L. Remington, C.I. Smith, F.T. Thorne.

MISCELLANEOUS NOTES

Eugene Monroe, of Macdonald College, Quebec, spent the last two weeks of July collecting at LAC À LA TORTUE, near Grand Mère, Champlain Co., Que., an exceptionally interesting locality in the sandy portion of the St. Lawrence Valley with a special flora and fauna. He took over 7000 moths in ten nights (only half of which were really favorable). Included were: Fagitana littera, Syneda alleni, Syngrapha hochenwarthii, Polychrysia formosa, Capis curvata, Acossus centerensis, Apantesis williamsii, Lexis bicolor, Eubaphe laeta, Hepialus gracilis, Sthenopis quadriguttata, etc. Sphingids were common at light, esp. S. gordius. The commonest phalaenid was Septis arctica, of which several melanics were taken, Munroe's only melanics of the year. Geometrids were abundant, esp. Semiothisa spp. Crambids were the dominant pyralids, while Choristoneura fumiferana was the commonest moth(the spruce form outnumbered the jack pine form 3:1). At bait, S. arctica, Pseudospaelotis haruspica, and Zanclognatha spp. were numerous, but no Catocala, prob. because of retarded season.

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Monroe, commenting on the Gaspe trip in August (see p.58), considers that trip too late for G. lygdamus couperi. "In the southern Laurentians, this species flies in late May and early June; in the Laurentide Park it appears later in June. It was abundant in a collection from Bic, Rimouski Co., Que., made in early July. The date of appearance in this region appeared to be slightly ahead of Plebejus saepiolus."

2. NORTHWEST- OREGON, WASHINGTON, IDAHO, AND BRITISH COLUMBIA

by John C. Hopfinger

The Northwest had alternating good and bad spells for Lepidoptera in 1947. Albright reported that in Oregon April and May had excellent weather, with butterflies normal and abundant, but continuous rain throughout June almost eliminated Lepidoptera and much retarded and limited the July fliers. The Steens Mts. had snow in June. The Blue Mts. (3500') had fair collecting at that time. By August the Lepidoptera regained normalcy. Speyeria erinna and Satyrium fuliginosa were common on Mt. Hood Aug. 24 at 6000', and Habrodais grunus was common at 3000'. A notable record was a torn Erebus odora near Dayton, Aug. 15.

In Washington, the coastal region was "almost a month early this year." Frechin found that Parnassius clodius, Oeneis chryxus, Speyeria hydaspe, Euphydryas taylori, Boloria chariclea, Epargyreus tityrus, and Pyrgus ruralis were unusually common. Colias occidentalis, Coenonympha ampelos, Limenitis lorquini, Incisalia iroides, I. mossii, I. eryphon were above average. Parnassius smintheus, Neophasia menapia, Speyeria cybele, S. zerene, all Vanessa, and the Papilios had a poor season. Aglais californica was still common but continued to decrease from the plague year recently experienced. A. antiopa continues to be rare.

Collecting in north-central Washington was good up to the end of May. Heavy rains and cold winds during most of June stopped the flight of all species usually taken in the middle of summer. In the higher country, from 4000' up, there was nothing to be had, up to the middle of July. After that date, Euphydryas, Boloria, Speyeria, Erebia were as plentiful as usual. This kept on until the last trip, about the end of August. In one spot, at 4500' in the Cascades, S. washingtonia, garretti and a form of atlantis were very common, some 50 of each being taken in half a day. Remington and Anderson found Neophasia menapia plentiful there at the end of August, something unusual, and Polygonia spp. very common. Papilio were almost a total loss. Half a dozen P. oregonia were seen where usually they are not at all scarce. P. eurymedon, rutulus, daunus were also very scarce, and not a single indra was seen. In the early spring, Melitaea sterope made a fine comeback, the first time in years it was fairly common. E. anicia also came back after some 4-5 years of absence.

Around the orchard districts, the use of DDT in spraying for codling moth has just about wiped out all local Lepidoptera, such as Colias, Pieris rapae, P. beckeri, as well as the housefly, a single one of which was seen, which is remarkable. Altogether, with the exception of Papilio, I would call the 1947 season better than average.

No reports were received from British Columbia or Idaho.

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Contributors: Ray Albright, A. Anderson, D.P. Frechin, C.L. Remington.

S.B. Smalley informs us that the "Calephalis borealis (muticum?)" reported in the NEWS (p. 70) were examined by Dr. A.E. Brower and Mr. W.S. McAlpine and were C. borealis. The food-plant around Cincinnati is Senecio obovatus Muhl.

3. ROCKY MOUNTAINS- NEW MEXICO, UTAH, TO ALBERTA

by J. Donald Eff

All reports show that this territory, which includes some of the richest butterfly collecting spots in North America, had a season which ranged from slightly below normal to very poor. Even in Colorado, where there was relatively good collecting as usual, the season was mostly two or three weeks later than normally. Here there was fine weather in early May, in contrast to the previous year's dry, early spring. Snow and a spell of wet, cold weather in late May eliminated some species usually out then and greatly retarded appearance of others. Fresh Incisalia eryphon, Callophrys apama, Anthocaris sara, and other strictly early June species were not uncommon on July 10th. Stallings and others found some of the Arctic-Alpine species, such as Oeneis lucilla and Boloria helena, were entirely absent or rare, rather than normally very common. On July 27 Erebia magdalena was in mid-flight on the rock-slides, compared to the 1946 flight period of July 7-20. Nabokov reported over a hundred different species, races, and forms around Long's Peak during the summer, including a female E. magdalena remarkably close to E. erinna. He also found Plebejus shasta very common. Species which were normally abundant in Colorado: Parnassius smintheus, Euchloe ausonides, Colias meadii and alexandra, Coenonympha ochracea, Erebia epipsodea, Minois oetus and olympus, Speyeria hesperis, Boloria myrina and frigga, Melitaea arachne, Euphydryas capella (at lower levels), Phyciodes gorgone and barnesi, Glaucopsyche lygdamus, Plebejus lycea, melissa, and saepiolus, and others. Among the unusually uncommon species were all the Theclinae, Euphydryas eurytion, Boloria freija and alticola, Oeneis uhleri, Erebia theano, Colias scudderi, and Phyciodes nycteis.

In Utah, Downey reports the same cold, late spring, followed by a summer with average temperatures well below normal and a noticeable reduction in the number of Lepidoptera flying. This was Utah's "poorest summer since 1941." Plebejus annetta and Phyciodes barnesi were not taken at all, "for the first time in many seasons." All Strymon were scarce. In the high Uinta Mts. (N.W.Utah) "several days were spent without seeing a single specimen." In the famous Ephraim Canyon Hammer found new snow June 22 and a retarded season, with Melitaea alena just appearing. A week later P.S. Remington found alena fresh and common and in late July Limenitis wiedemeyeri, Hypaurotis chrysalus and various Speyeria were common at lower levels but high in the canyon no Lepidoptera were present. Hammer found Phyciodes tharos very common and newly-out along with Speyeria utahensis in Provo Canyon June 14. Downey found both broods of Aglais californica and A. milberti "out in great numbers." Brephidium exilis, a rare mid-summer visitor in the Salt Lake Valley was taken on October 9!

Glasgow reports a steadily cold and unproductive season on the Green River between 7000' and 9000' in Wyoming, although Coenonympha haydeni, Speyeria eurynome, and Boloria kriemhild were fairly common. (See NEWS, p. 84, for Wyoming notes).

No reports were received from New Mexico, Montana, or Alberta.

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Contributors: J.C. Downey, Clyde Glasgow, W.A. Hammer, A.H. Moeck, V.V. Nabokov, C.L. & J.E. Remington, P.S. Remington, D.B. Stallings.

4. GREAT PLAINS- TEXAS AND EASTERN PLAINS OF ROCKY MTS. STATES TO SASKATCHEWAN AND MANITOBA

by Don B. Stallings

The 1947 season on the Great Plains commenced wet and late and continued in that fashion well into June. As a result, flights of nearly all Lepidoptera were from 10 to 20 days late. Many species usually common in the first third of any season were scarce or entirely absent.

The subtropical area of Pharr and Brownsville, Texas, is difficult to correlate with the remainder of the Great Plains area. However, the following species appeared in 1947 in better numbers than in 1946: Ascia josephina, Danaus eresimus, Euptoieta hegesia, Apodemia walkeri, Thecla bazochii, Strymon pastor, Strymon clytie, Achalarus coyote, Cogia calchas, Chiomara asychis, Lerodea tyrtaeus, Lerodea edata, L. julia, and Spathilepia clonius. On the other hand the following species were few or absent this year: Papilio ornythion, Papilio anchisiades, Chlosyne endeis, Anartia fatima, Victorina steneles, Timetes chiron, Athena petreus, Adelpha fessonia, Emesis emesia, Strymon azia, Mitoura xami, Astraptes fulgerator and Synapte malitiosa. This being an area where citrus fruits are grown, it may be that the use of D.D.T. and other insecticides affects the Lepidoptera populations from season to season. The late fall was extremely dry and butterflies consequently scarce.

Collecting in the Big Bend area of Texas from June 26 to July 3 produced about the same material as was collected the year before during the first 10 days of June. (See NEWS, p. 42).

In the Panhandle of Oklahoma and the Mesa country of N.E.New Mexico Phyciodes picta, Amblyscirtes oslari and Atrytonopsis vierecki were found in fair numbers on May 30. The picta were of the spring brood and were flying just 15 days earlier than the summer brood for 1946 in the same area, indicating that the 1947 season was 15 to 30 days late.

In Kansas spring collecting (Mar.20-June 20) was practically nil, due to continued rain. Euchloe olympia, usually abundant in early April, did not appear until the last half of April and then in few numbers. The number (always small) of Megathymus yuccae did not seem to be affected although the flight was at least 10 days late. The June flight of Isogramma hageni did not occur. In spite of a record lack of late summer rain, Minois alope appeared on schedule in July and in the usual numbers. In August and the 1st part of September good flights of Isogramma hageni, Melittia lindseyi and Melittia snowi were observed. Later fall material was generally scarce and failed to show the usual extreme fall or winter forms.

Saskatchewan was as follows (Bruggemann): "Spring cold, wet, and very late; spring butterflies nearly absent, on the wing only days instead of weeks; (normally) common moths very few or none. Summer started hot and dry, butterflies fair to good; some Phalaenids fair, Notodontids very good, Geometrids very poor. (Summer) continued with numerous hailstorms and ended wet; fall rather wet and cold, sugaring hopeless, no Catocala and no Geometrids; season ended nearly a month earlier than usual." A few species did well. Boloria frigga was common "for the first time in nearly ten years"; "a pair of Euptoieta claudia, the first taken by me in this district";4 Poecilopsis rachelae.

Contributors: P.F.Bruggemann, H.A.Freeman, C.L.Remington, J.R.Turner.

5. CENTRAL- MISSOURI TO WEST VIRGINIA, NORTH TO ONTARIO

Along with protracted cold weather in spring, east-central Missouri had a remarkable year, in which some species formerly considered rare or strays appeared in large numbers. Often for several consecutive years no single Euphydryas phaeton is seen and search of its Mo. host (Aureolaria grandiflora) yields nothing. But in the late summer of 1946 O'Byrne found many nests of larvae, and in June, 1947, phaeton had one of its great years. Phyciodes gorgone, a rare species in Mo., suddenly appeared plentifully in late June & early July. Strymon ontario, usually moderately common, was very scarce in 1947 but was out at the usual time. Calephalis muticum was unusually common through June, the normal date. Again in early Sept. it was fresh, flying with Hesperia leonardus, which was out at the normal time. Catocala had a poor year.

In north-central Illinois Glenn reported "the poorest collecting season I have experienced in the past 16 years." The spring was cold & wet, with record rainfall for May. The spring moth emergence was much curtailed with some normally abundant species not seen at all, and those which did emerge were 2 to 3 weeks later than usual. The cold & rain continued into June but July & August were dry & hot. Even the pest moths, such as the Corn Borer & Codling Moth, were relatively scarce in both 1st & 2nd broods. In general the summer & fall collecting was poor and larvae difficult to find. However, Loxostege similalis caused considerable garden damage and the Crambidae were normally abundant. The leaf-mining moths were numerous in late summer & fall, coming back after scarcity in 1945-46. "Gelechiidae and Tortricinae were very scarce." Parasites of moth larvae were much less numerous than in 1946, when they were very abundant. An unusual record for west-central Ill. was a Strymon m-album in May, reported by Starrett from Elsah. He also notes the abundance of Nathalis iole, Eurema lisa, Colias eurytheme, & Papilio philenor this fall and the relative scarcity of Anaea andria. Woodcock thought the season at Chicago normal, but did little field observing.

In upper Michigan Voss found the season retarded, with normal May fliers out as follows: Oeneis- June 21, Incisalia- June 23, Coenonympha - July 8. Feniseca tarquinius & Phyciodes nycteis, tharos, & batesi were much less abundant than in 1946. Vanessa virginiensis & Lethe portlandia were commoner than in recent years. August had an early frost and also great heat & drought, but the moth collecting at light was fair and a great variety of species of butterflies was noted.

Wisconsin's weather was much like north-central Ill., and little appeared at Green Bay before June. June was excellent for skippers, which were flying two weeks late. The unusually common June skippers were Carterocephalus palaemon, Hesperia metea, Polites mystic, Amblyscirtes samoset, & Erynnis spp. Limenitis arthemis & Melitaea harrisii had a poor year. Catocala were notably scarce. Griewisch reports "hundreds of Ctenucha virginica" found dead, stuck to flowers. He could not determine the cause but suggested a fungus.

At Payne, Ohio, Price found Papilio ajax & marcellus common and other Papilio unusually scarce. Vanessa cardui had its third straight year of scarcity. Atrytone dion was commoner than in 1946, and A. bimacula was rare as usual. Catocala was very scarce. In general, the year was normal after the cold, wet spring.

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6. SOUTHEAST- FLORIDA TO LOUISIANA, NORTH TO ARKANSAS AND VIRGINIA

Several reports covering some part of the season in Florida showed it irregular and with more time below normal than in other years. In Dade and Monroe Counties January was very favorable and productive. February and March were unusually cold and retarded the Lepidoptera. Strymon favonius, normally common in mid-March, failed to appear until late April, and then was scarce. Eunica tatila was still uncommon by June 30. In spite of dry weather in April and May the flight periods were about normal by June 30. Aphrissa statira was on the wing at almost any time, with greatest abundance in June. Dryas phaetusa seemed to have a good year. Anthanassa frisia was abundant. Athena petreus, usually common, was very rare. Anaea portia was uncommon as usual. Papilio aristodemus ponceana, on Key Largo, was approximately one month later than usual. It was much scarcer than in the peak years of 1934-35 and 1944-45. The following table (from Schoenherr) may be useful for comparison with P. ponceana in future years:

	May 11	May 14	May 17	May 18	May 31	June 1	June 7
Males taken	0	1	5	2	4	1	1
Females taken	3	1	7	1	7	2	5
Observed	8	11	19	3	36	15	13

Mrs. Grimshawe took a number of Asbolis sandarac (new to U.S.A.?) in early September around Miami and in spring many Eurema nise perimede at Royal Palm Park. Schoenherr gave no comparisons on the Sphingidae collecting, but took 25 spp., including Cocytaeus antaeus, Isoparce cupressi, Lapara coniferarum, Protambulyx carteri, Pseudosphinx tetrio, Phryxus caicus, Pachylia ficus, Calliomma parce, Cautethia grotei, Perigonia lusca. Fires in the Everglades continue to have a serious effect on Lepidoptera, as on the other fauna and flora.

Fuller found Atlides halesus in the latter part of its brood and very common in central Florida Nov. 15, and Strymon m-album less abundant there. Near Sanford Anartia jatrophae was common in November. In northern Florida Berry noted the extremely wet year, with high tides and severe hurricane damage all combining in a poor year, with everything late. Catocala sappho, generally not rare, was not found at all. C. jair was abnormally rare. Strymon calanus (= wittfeldi) and S. favonius were nearly normal. He reports taking some Hesperia meskei, Poanes howardi, Atrytone palatka, A. berryi, Atrytonopsis loammi, and the first Wallengrenia otho he had ever seen. Megathymus yuccae was found on Merritt Is. An unusual capture for Florida was an albino female of Colias eurytheme.

There is a great void in information from all other southeastern states this year, although Fuller mentions an unusual abundance of Pieris protodice and Euptoieta claudia on the Virginia-Tennessee border. In the Great Smoky Mts. in mid-June we found unusually heavy rain and mist with relatively few butterflies present. Limenitis astyanax, Papilio glaucus, and Everes comyntas were the only common species. Ackermann, in the Smokies in late June and early July, found Spargania luctuata extremely common, but only above 3000'. It was in close association with the equally common and similarly marked Neodezia albovittata. The latter was also common at low altitudes.

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Contributors: O. Ackermann, D.F. Berry, S.V. Fuller, Mrs. C.N. Grimshawe, C.L. Remington, W.H. Schoenherr.

7. NORTHEAST- MARYLAND NORTH TO QUEBEC AND NEWFOUNDLAND

by Eugene Monroe

At Irwin, Pa., the recession of Alsophila pometaria larvae continued after the pest years of 1943-45; Catocala were very scarce. No other reports are at hand from Pa. and none south through Maryland.

At Rochester, N.Y., Papilio troilus and glaucus were in usual numbers, and Pyrgus communis was abundant, but all other butterflies were unusually scarce. Autumn strays included only 1 specimen each of Alabama argillacea, Magusa orbifera, and Tetanolita mynesalis.

At Fall River, Mass., Rogers reported Incisalia unusually scarce, Erynnis abundant, and Speyeria, including idalia, at or near normal numbers. Autumn Lepidoptera scarce, most migrant species absent. Johnston found Atrytonopsis hianna and Hesperia metea common outside of Boston in May. Summer collecting around Petersham was exceptionally poor, but Limenitis astyanax and arthemis were common and Lethe portlandia in fair numbers. See Clench (NEWS, p. 58) for Theclinae.

At Hancock, N.H., June 30, S. atlantis was common, but L. arthemis proserpina, Lycaena thoe, and Atrytone bimacula were just emerging.

In Maine, the season opened 2-3 weeks early for hibernating species. Cold, wet weather in May and June reduced Lepidoptera abundance. Incisalia, Lycaenopsis, Erora, P. glaucus were all scarce or absent. P. ajax was in normal numbers, but late. Warm, dry weather after early July had adverse effects. Most Lepidoptera were scarcer than usual. Polygonia were not seen. Vanessa virginiensis, Phyciodes tharos, and Colias philodice were unusually common in Sept. and Oct. C. eurytheme was moderately common. Sphingidae, Autographa, Catocala, etc., were scarce. Common grass and weed feeding moths were mostly normally abundant. New record for Maine: Heliothis virescens.

In the Upper St. Lawrence Valley hibernating species were below normal, as were May and early June spp., except for Pieris rapae. P. virginiensis and Pap. glaucus were very scarce. Moths, esp. Scoparia and Geometridae, became abundant in late June. In July & Aug. moths were common, but mostly common grass and weed feeders. Nymphulinae & Schoenobiinae were normally abundant; Euxoa (but not Feltia & Agrotis) were greatly depressed, Catocala less so. Habrosyne rectangulata was commoner than H. scripta! Autumn Lepidoptera were abundant, C. philodice very common, C. eurytheme much scarcer than in 1946. Phalaenids and other moths common in Sept. & Oct. On the Lanoraie Bog Euphydryas phaeton, Melitaea harrisii, and Atrytone bimacula and other butterflies were common, but about a week later than normal. See notes on Lac à la Tortue (NEWS, p.89). At the Laurentides National Park frequent collecting at 1500'-3000' showed the season abbreviated, but succession normal and abundance above normal. P. glaucus, Glaucopsyche lygdamus, Erynnis sp., Carterocephalus mandan were very abundant at lower levels in June. Erebia discoidalis was well distributed. Usual acid bog Geometrids were common. The early August fauna was typical: Polygonia faunus, gracilis, progne, Boloria myrina & chariclea common; B. bellona & freija scarcer. One worn Plebejus aster was taken. Moths were common, Sthenopis more than usual. C. eurytheme not seen in the Park this year, though common in 1946. New Quebec record: Deidamia inscriptum.

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Contributors: O. Ackermann, A.E. Brower, W.M. Johnston, C.P. Kimball, W.P. Rogers.

8. FAR NORTH- ALASKA TO LABRADOR

Two reports on Lepidoptera in northern Canada provide information on this little-known and consequently particularly interesting region. Only the vicinity of Churchill on Hudson's Bay has been well collected, so seasonal comparisons for most Arctic localities are not possible.

Hovanitz made a trip to northwestern Canada specifically for his genetics studies of Colias and his notes deal entirely with that genus. In the first week of July in the Peace River country the season was retarded, with C. christina just emerging and C. gigantea at its peak. C. philodice eriphyle was uncommon. Near Ft. Smith, N.W.T., gigantea was common in willow thickets and christina rare, July 6-9. On July 24-26 gigantea had nearly disappeared and christina was very abundant. Near Yellow Knife, July 10-12, no Colias were seen. "July 12-19 was spent at Coppermine on the arctic coast. ...The period was too early for the 1947 season although in a normal year the week would have been excellent. Colias boothi was taken in quantity on the 17th and 18th. ..This species appears to be a hybrid between Colias nastes and hecla but the latter two were not taken." Boothi was again found at Dismal Lakes. Near Jasper, Alta., christina was very common in late July. Several important sections on host plants and hybridization from Hovanitz' report have been selected and will appear elsewhere in the NEWS.

Freeman spent the whole open season in far northern Manitoba for the purpose of more inclusive study of Lepidoptera than was Hovanitz' aim. His terse, clear report is quoted directly: "The period from June 11th until July 11th was spent in the subarctic region at Churchill in northern Manitoba. During that period certain species of Oeneis, Erebia and Boloria were particularly common and it was possible to capture more than 100 butterflies during the course of a single day. One would gain the impression that over the whole of such a vast country, the butterfly population must be extremely immense and the numbers incredible. In general I should say that the Churchill region during the past summer was extremely profitable for collecting Lepidoptera.

"From July 11th to August 15th I collected on the north-western shore of Baker Lake, a locality situated in the center of the so-called Barren Lands and about 450 miles north and slightly west of Churchill. This location lies about 300 miles north of the tree-line and in general the short summer season was extremely inclement and very poor from the standpoint of Lepidopterous collecting; however, I managed to capture a significant series of Colias boothii Curt., Erebia fasciata Butler and Erebia rossi Curt. I also took 2 specimens of Boloria frigga improba Butler and 2 Plebejus aquilo Bdv. Boloria polaris Bdv. was fairly abundant as were some of the smaller Noctuids represented by the genus Anarta and Sympistis. Oeneis taygete hanburi Wats. and an Oeneis in the melissa complex were fairly numerous. Colias nastes subarctica McD. only occasionally encountered. A few Pyralids, Tortricids and Geometers completed the Lepidopterous picture of the area. As this material is not spread as yet, my determinations are naturally only tentative in these difficult northern groups. In general I should say that the past summer in this area was extremely poor and there were only 5 days during my stay there that the temperature was high enough for butterfly activity; a good deal of my butterfly collecting occurred under rocks and other cover."

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Contributors: T.N. Freeman and William Hovanitz.

129. Chermock, Ralph L., "A New Subspecies of Limenitis archippus (Lepidoptera, Nymphalidae)." Am. Museum Novitates, no. 1365, 2 pp. 7 Nov. 1947. New race from Vera Cruz and Hidalgo, Mexico, named hoffmanni for C.C. Hoffmann, who first recognized the race as distinct. The southernmost Limenitis in America. Resembles Danaus eresimus montezuma. Chermock reviews the butterflies which the races of archippus (The Viceroy) resemble. Refers to the Monarch as Danaus m. menippe.

130. Chermock, Ralph L., "A Revisional Study of the Euptychia pyracmon Group." Ent. News, vol. 58, pp. 193-204, 12 figs. Oct. 1947. One of the most satisfying papers we have had the pleasure of reviewing this year. Dr. Chermock has studied genotypes of the genera Neonympha, Megisto, Euptychia, Cissia, Cyllopsis, and Taygetis, and sinks Neonympha, Megisto, and Cissia as synonyms of Euptychia (having page priority), with Cyllopsis as a subgenus and Taygetis as a probable subgenus (or synonym) of Euptychia. The E. pyracmon group, with eleven species, makes up the subgenus Cyllopsis. Two new species are described: nayarit (Nayarit, Mexico) and pseudopephredo (S.Angel, Mexico). Several current names are dropped into synonymy. Nabokov's extremely interesting E. dorothea from Grand Canyon proves to be perfectly distinct genitalically from all other species. The male genitalia are clearly figured for the genotype of Euptychia (herse) and all the species of Cyllopsis except hedemanni and clinas. A diagrammatic sketch of the pattern elements for the subgenus is given. A key to all species is another fine feature. The checklist at the end of the paper gives detailed references and establishes the following synonymy for the species of Euptychia (Cyllopsis):

gemma gemma (Hübn.)
gemma freemani (Stall.& Tur.)
  syn. form inductura (""")
dorothea dorothea (Nabokov)
  syn. edwardsi (Nabokov)
  syn. avicula (Nabokov)
  syn. texana (Wind)
dorothea maniola (Nabokov)
pephredo God. & Salv.
pseudopephredo R. Cherm.
nayarit R. Cherm.
pyracmon pyracmon (Butl.)
  syn. hilaria God.& Salv.
pyracmon henshawi (Edw.)
hedemanni Feld.
  syn. ithama Butl.
  syn. vetones God.& Salv.
clinas God.&Salv.
rogersi God.& Salv.
argentella Butl.& Dr.
philodice philodice God.&Salv.
philodice nelsoni God.& Salv.

131. Kiriakoff, S.G., "Het Vraagstuck der 'physiologische Ondersoorten' bij Vlinders." (In Flemish). Naturwet. Tijdschrift(Ghent), vol. 29, pp. 43-47. 30 Apr. 1947. Maintains that le Doux's "physiological subspecies" is not desirable and sympatric non-crossing butterflies are actually species.

132. Stallings, Don B. & J.R. Turner, "A new subspecies of butterfly." Pan-Pacific Ent., vol. 23, pp. 119-120. July, 1947. Describe as new Strymon ontario race violae (Folsom, N.M.) based primarily on ground-color differences from races autolycus and ilivia. Note expresses "opinion that one of the basic characters of valid subspecies of Lepidoptera on continental areas is change of ground color."

8. William Jacob Holland (1848-1932)

Although W.J. Holland has received boundless recognition from individuals and societies throughout the world, it must be acknowledged that he was by no means the great Lepidopterist that Edwards and Scudder were. His two best-known publications, the Moth Book and the Butterfly Book, stand as his most extensive contributions to Lepidopterology and, as was noted in the reviews of these volumes (NEWS, pp.27,51,57), although taking a definite place in this field's literature and encouraging a widespread popular interest, both leave much to be added in accuracy and completeness.

Holland was born on Aug. 16, 1848, in Jamaica, West Indies, where his father had been sent as a missionary. In 1867 he graduated from the Moravian College and Theological Seminary in Bethlehem, Pa., and went to Amherst College. Upon receiving his A.B. in 1869, he became principal of the Amherst High School, and a year later transferred to a similar position in Westboro, Mass. He won an A.M. in 1872 from Amherst. The same year he was ordained in the Moravian ministry, and accepted a pastorate in Philadelphia. He successively held that another ministerial post and several professorships both in zoology and other fields. He was inordinately proud of his several honorary degrees bestowed by various universities. Even during the course of his ministry, he devoted time to scientific pursuits, such as joining the U.S. Eclipse Expedition to Japan in 1887 as a naturalist. In 1879 he married Carrie Moorhead, and they had "two bonny boys". For five years Holland was Chancellor of the present University of Pittsburgh. In 1898 his "close friend", Andrew Carnegie, invited him to become Director of the Carnegie Museum, a post which he held until 1922, when upon retirement he became Director Emeritus. He died on Dec. 13, 1932, at the age of 84, just after the publication of the revised edition of the Butterfly Book.

Some of those who knew Holland personally are inclined to criticize his sense of self-importance and air of pomposity. A review of the list of his published works on entomology indicate that there is even less basis for this scientific egotism than would be expected. Of the 117 papers on insects which he wrote, all but a very few are on Lepidoptera. Numerous papers on Lepidoptera are lists of collections, while only two short papers are on life histories, and only one is a large revision or other very extensive piece of research. The largest number of the papers deal with the Lepidoptera of Africa, in which Holland described hundreds of new species and scores of new genera, many of which were collected by Holland himself. These range over many families of moths and butterflies. Other contributions concern the faunas of the Bahamas, Malaysia, and various islands.

Other fields in which Holland dabbled are numerous, including paleontology (especially Jurassic dinosaurs), ornithology, archaeology, and history. He was an authority on museum administration and founded the American Association of Museums. He is acknowledged as the prime force in directing the growth of the Carnegie Museum, and edited its Annals and Memoirs for 34 years. He aided in the organization of the first international entomological congress and was made an Honorary Life Member. He will be a controversial figure for many years, but in whatever low esteem his research papers may be held, his two valuable books on American moths and butterflies deserve great credit. Few scientists lived more colorful or active lives.

J.E.R.

NOTICES BY MEMBERS

Available now: LIVING PUPAE(COCOONS) OF ACTIAS SELENE, long-tailed Indo-Australian saturniid. Reared locally under netting, free from parasites.
Otto H. Schroeter, 613 Williams Street, New London, Connecticut

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I have at present a very few butterflies in papers for disposal. Let me know what you want in the way of Pacific Coastal insects; I will make an effort to obtain them. I will probably be able to offer later a few pupae of Arzama obliqua. Will accept cash or what have you for exchange. Richard Guppy, R.R. 1, Marine Drive, Wellington, Vancouver Is., B.C., Canada.

GEORGIA LEPIDOPTERA offered in exchange for Lepidoptera from other parts of U.S.A. or foreign countries. H.W.Eustis, Woodbine Rd., Augusta, Ga.

Wanted: papered specimens of ACTIAS LUNA, AUTOMERIS IO, CITHERONIA REGALIS, & EACLES IMPERIALIS for cash, or will exchange rare Catocala.
R.C. Casselberry, 53 Edgemont Road, Scarsdale, New York.

TO TRADE: 67 Papilio troilus chrysalids for Lepid., preferably cocoons or chrysalids. The Hynes Family, 152 Meachem Ave., Battle Creek, Mich.

Will purchase MORPHO MENELAUS, RHETENOR, SULKOWSKYI by the hundred lot or whatever quantity available. The Butterfly Store, 77 Madison Ave., New York 16, N.Y.

WISH TO PURCHASE Canadian (esp. Arctic) Boloria & Colias. Alexander B. Klots, Dept. of Biology, College of City of New York, New York 10, N.Y.

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* * * * * * * * NEWLY AVAILABLE LIVING MATERIAL * * * * * * * *

PUPAE OF PAPILIO ZELICAON and P. PHILENOR HIRSUTA from California, full data, offered in exchange for papered butterflies needed for our collections.

Thomas W. Davies, 9734 Castlewood St.
William A. Hammer, 5300 Walnut St.
Oakland, California

LIVING PUPAE & EGGS

Pupae of Citheronia regalis and Euparthenos nubilis.
Eggs of Catocala cara, C. concumbens, and C. amatrix.

Herman Wilhelm, Buckingham Rd., R.D. #1, Willimantic, Conn.

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* *

After completing the NEWS manuscript we have just received (Dec.13 the long-awaited "Systematic Catalogue of Speyeria (Lepidoptera, Nymphalidae) with Designations of Types and Fixations of Type Localities" by dos Passos & Grey. It is the culmination of a campaign undertaken several years ago to bring order from the chaos then present in the American "Argynnis", and we cannot be too enthusiastic in welcoming it. The NEWS will carry a full-page summary in the next number, but meanwhile- warmest congratulations to members Dos Passos & Grey for their achievement!

* *

A NEW QUERY COLUMN

There have been several requests for the establishment of a "Question and Answer" column in the NEWS. In order to insure authoritativeness we approached Professor W.T.M. Forbes to prepare the answers and he very kindly consented to do so if extensive library research is not required. We hope this will be a busy column. Send questions on any lepidopterological matter to the editor. Naturally, mere matters of opinion are not wanted. If sufficient material is received it may be possible to commence this feature in the January NEWS.

Add to Board of Specialists (pp. 13, 14, & 86):

NORTH AMERICA

All Pieridae and Boloria (Brenthis).....Dr. A.B. Klots
Dept. of Biology, College of City of N.Y., N.Y. City 10.

Phalaenidae and Notodontidae.....J.G. Franclemont
5829 Little Falls Rd., Arlington, Virginia.

NEW MEMBERS

American Entomological Society, 1900 Race St., Philadelphia 3, Pa.
Araujo, Dr.R.L., Instituto Biologico, Caixa Postal 119-A, Saõ Paulo, BRASIL.
Bailey, Norman S., 16 Neponset Ave., Hyde Park 36, Mass. LIFE HIST., ESP. OF TABANIDAE (DIPTERA) & TINGITIDAE (HETEROPTERA).
Baker, James, 2800 Broadway, Baker, Oregon.
Buchholz, Otto, 493 Markthaler Pl., Roselle Park, N.J. ALL N.A. MACROLEPID. BUY, EX.
Carr, Robert, 5151 Colerain, Cincinnati 23, Ohio. REARING, C., MOUNTING.
Ehrlich, Paul R., 538 Academy St., Maplewood, N.J.
Fattig, P.W., Dir. of the Museum, Emory Univ., Emory University, Ga.
Frechin, Donald P., 1504 N. Lafayette, Bremerton, Wash. DIURNAL LEPID. OF N.A. EXCEPT HESPERIIDAE; PAPILIO MACHAON COMPLEX OF WORLD.
Hulbirt, Lowell, 310 W. Electric St., Glendora, Calif. RHOP., ESP. LYCAENIDAE & HESPERIIDAE.
Klots, Dr. Alexander B., Dept. of Biology, College of City of New York, 17 Lexington Ave., New York 10, N.Y. N.A. PIERIDAE & BOLORIA.
Murphy, Gardner, 16 Chauncy St., Cambridge 38, Mass. NEW ENGL. RHOP. & HET.
Nielsen, Mogens C., 13661 Castleton Ave., Detroit 27, Mich. C. N.AM. RHOP. & HET. (SPHINGIDAE, SATURNIIDAE, CERATOCAMPIDAE, CAT.). LIFE HIST., REARING.
Sweetman, Harry F., 910 S. Sibley Ave., Litchfield, Minn. TAX., LIFE HIST., OF LEPID. OF U.S. C. ALSO OTHER ORDERS.
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SMITHSONIAN INSTITUTION
SEP 15 1949
NATIONAL MUSEUM

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MAILING DATES 1947

#1 - May 4
#2 - June 4
#3 - Between Aug.3 & 10
#4 - Sept. 27
#5 - Oct. 20
#6 - Oct. 31
#7 - Nov. 30
#8 - Dec. 17

ERRATA

p. 34, lines 13 and 16 - "Dacnonympha" should be "Dacnonypha".

p. 83, line 1 (of text) - "Burggemann" should be "Bruggemann".

p. 86, Dr. Crawford's zone number should be "14".

p. 88, text lines 15 & 20 - "neumogeni" should be "neumoegeni".

p. 88, text line 20 - "Melicleptera pulcheripennis" should be "Melicleptria pulchripennis".

p. 88, text line 21 - delete "mojave".

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LEPID.	- Lepidoptera	HET.	- Moths
LIFE HIST.	- Life history	CAT.	- Catocala
RHOP.	- Butterflies	ESP.	- Especially
NOCT.	- Noctuidae	TAX.	- Taxonomy
GEOM.	- Geometridae	FAM.	- Family
N.AM.	- North American	BIOL.	- Biology
DISTR.	- Distribution	C.	- Collect
ECOL.	- Ecology	EX.	- Exchange

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Cornell University Library, Ithaca, New York.

Illinois, Univ. of, Library, Urbana, Illinois.

Museum of Comparative Zoology Library, Harvard University, Cambridge 38, Mass.

Office International de Librairie, 184 Rue Hotel-des-Monnaies, Bruxelles, Belgium.

Sweden, The Entomological Society of, Library, Stockholm 50, Sweden.

U.S. Dept. of Agriculture Library, Washington 25, D.C.

ADDITIONS TOO LATE FOR CLASSIFIED INCLUSION

Parker, D.E., 1033 S. Beacon Ave., Los Angeles 15, Calif. RHOP.

Science Library, The, Science Museum, South Kensington, London S.W. 7, England.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P.O. Box 104, Cambridge 38, Massachusetts, U.S.A.

Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

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With the present issue the NEWS begins its second volume and the Society enters a new year. For new members a brief account of Society activities in 1947 is presented.

After discussions and planning for nearly a year H. K. Clench and the present editor mailed a mimeographed letter on March 24,1947, to about 350 American Lepidopterists whose addresses were assembled from various sources. Later, as more addresses were obtained, many other copies of the letter were sent out. By the end of 1947 there were 222 Charter Members of the Society, including 12 members in 7 foreign countries, provided for by American friends, and subscriptions were being sent to 11 libraries. The generosity of 31 members in giving extra funds resulted in solvency for 1947. The Society issued 8 monthly numbers of the NEWS, containing a total of 100 pages and 3 pages of indices. Mr. Clench's change of residence to Michigan forced him to discontinue co-editorship in September. The December number was devoted largely to the first Annual Field Season Summary of Lepidoptera for North America. Special matters during the year included: the Articles of Organization (p.2), the Board of Specialists(pp.13-14), Host Plant Identification Service(p.25), promotion of rearing and distributing living material (pp.37,62, etc.), and the Membership List. A series of book reviews and brief biographies was presented in order to provide a background of Lepidopterology for inexperienced members. An annotated list of recent papers on Lepidoptera from the world literature was given in the hope of aiding all members.

These features will be continued in Vol.II and others added. Please turn to page 10 for the present Board of Specialists. Lithoprinting will permit a 30% increase in reading matter as well as free illustrations. Also it will constitute publication on a nomenclatorial basis, but no new taxonomic material (new species, etc.) will be accepted, at least in Vol. II. Usually only solicited articles are desired for the NEWS and it is intended that these be chiefly of the review sort. The complete membership roll is planned for October, and the Season Summary will probably be later and larger than in 1947 and appear as a NEWS supplement. Vol. II will be issued monthly except during July, August, and September.

In spite of the preponderance of North American members, it is earnestly hoped that members in other areas will be active in the Society. Notes, opinions, and additions to the literature listing will be warmly welcomed. Suggestions for sound development in an international direction are invited.

GEORGE SHIRLEY BROOKS

The death of George Shirley Brooks on Monday, November 3rd, 1947, has removed yet another of those hobbyists who have done so much to advance our entomological knowledge.

Born in Suffolk, England, in 1872, even in his youth Shirley Brooks showed that intense interest in Nature that was to be a controlling factor in the use of his leisure hours. For a time he specialized in Diptera, but finding that order in such confusion, returned to his first love, butterflies. His keen collecting added a number of species to the Manitoba list and several new ones to Science.

Coming to Canada in 1911 he spent a few months farming and then entered the service of the Canadian National Railways in Transcona, Manitoba. Quiet and retiring, he continued his studies of the local butterflies, until the formation of the Natural History Society of Manitoba - in which he took a prominent part - compelled him to assume a position of leadership. Always important at meetings of the Society, he was never too busy to help those who sought aid or advice, and at his summer home at Victoria Beach, Manitoba, the door was always open to anyone interested in entomology or indeed in any branch of Natural History. Following his superannuation in 1937, he divided his time among the Manitoba Museum, expeditions to such places as Churchill, and his own collections.

His special interest in the Manitoba Museum was shown by his gift to that institution of an almost complete collection of Manitoba butterflies in beautiful condition. His loss to the M.N.H.S. is a very severe blow as he was perhaps its hardest working member, serving as President, and as secretary for many years.

Shirley Brooks was first and last a collector. He loved being out in the sunshine, net in hand, among the trees and flowers searching for perfect specimens which he mounted with consummate artistry. He was not interested in describing new species and it was only with difficulty that he could be persuaded to prepare his list of the butterflies of Manitoba, published in the Canadian Entomologist,LXXIV:pp.31-36, February, 1942.

J.B. Wallis - Winnipeg.

SMITHSONIAN INSTITUTION
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NATIONAL MUSEUM

A REPORT ON THE RECENT A.A.A.S. MEETINGS IN CHICAGO

The recent meetings (Dec. 27-31) of the American Association for the Advancement of Science in Chicago included the annual meetings of several A.A.A.S. member societies of interest to Lepidopterists. Here are a few comments on these societies and specific papers.

The ENTOMOLOGICAL SOCIETY OF AMERICA had its best paper-reading sessions in the last three years. Dr. Alvah Peterson of Ohio State University exhibited and explained a valuable method of killing and preserving insect larvae in the field so that straight, well-extended specimens can be obtained easily. This will be given elsewhere in the NEWS. Dr. R.L. Post of North Dakota State College showed an efficient and accurate apparatus for making drawings of microscopic material with a projection prism. Dr. A.C. Cole of the University of Tennessee gave a preliminary report on insects found on Bikini Atoll after "Operation Crossroads". He found all the species of butterflies known from the area very common on Bikini and other islands of the Atoll and apparently unaffected by the Atomic Bombs. Dr. C.M. Williams of Harvard University reported on endocrinology of Platysamia cecropia larvae. Dr. Z.P. Metcalf, retiring president of the E.S.A., read a paper on "Static vs. dynamic nomenclature", calling for the latter, of course, including a ready acceptance of necessary name changes rather than the common irritation and reluctance regarding the abandonment of a well-known name. Dr.J.C. Bradley, of Cornell University, brought out the necessity of citing the true distribution of insects. Instead of the old method stating, for example for Speyeria atlantis, "Labrador to Virginia, west to British Columbia and California," the correct citation should read "Labrador to British Columbia, southward to New York, Michigan and North Dakota, and in the mountains to Georgia, Nebraska, Colorado, and California." The former method would lead a collector to expect atlantis in Kentucky and Missouri, where it does not occur at all. Dr.C.W. Sabrosky of the U.S. Bur. of Entomology and Plant Quarantine discussed eloquently current needs in nomenclature, on which he is an authority. He urged full support of the International Code of Zool. Nomenclature, but suggested a number of urgently-needed changes. He called for strong self-discipline in avoiding straying from the Rules. One of the points needing emphasis is that many excellent taxonomists are very poor nomenclaturists. In its business meeting the E.S.A. took a very desirable step in establishing an insect physiology foundation to issue a new Journal of Insect Physiology under a plan formulated primarily by Dr. J.F. Yeager and Dr. A.G. Richards. The E.S.A. tentatively rejected the invitation to join the new American Institute of Biological Sciences, after a warm discussion following which the proponents of expediency and a pressure-group were defeated in the voting. Dr. A.W. Lindsey resigned from editorship of the Annals because of pressure of work and no successor was announced. Dr. H.H. Knight, Hemipterist, of Iowa State College, was elected the new president of the Society.

The new SOCIETY FOR THE STUDY OF EVOLUTION held its second annual meeting this year and its program had several papers of importance to anyone interested in speciation. The standout was the symposium on Natural Hybridization presented by four of the most interested authorities on the subject. Other papers dealt with serology in taxonomy, sexual psychology between species of insects, chromosome races, and the role of climate in producing races.

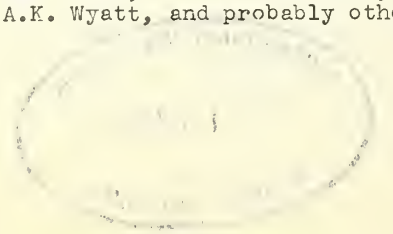
The proposed SOCIETY FOR SYSTEMATIC ZOOLOGISTS held an organizational meeting which had a surprisingly large attendance and appears to be a going concern. Systematic Zoologists desiring to join should send their name, address, field of interest, and $1.00 to: Dr. G. W. Wharton, Duke University, Durham, North Carolina.

The GENETICS SOCIETY OF AMERICA meetings included many papers indirectly related to Lepidoptera study. Dr. William Hovanitz, of the University of Michigan, reported on "Differences in the Field Activity of the Two Colias Color Phases at Various Times of the Day." Unfortunately we had to catch a train before this paper was given, so we know no details.

Mr. Francis Hemming, Secretary of the International Commission on Zoological Nomenclature, and a noted Lepidopterist, talked informally at a special meeting. He reviewed the history of the Commission, explained many of the very difficult problems it is now facing, largely administrative, rather than nomenclatorial, and then told of some things the Commission will do in the future and some which it hopes to do. He said the Commission is preparing a small volume which will give the official corrected version of the Rules (in French), the English translation, and summaries of the Opinions rendered. The book will cost $2.00 and will be issued after the International Zoological Congress in Paris in July, in order that any changes of the Code which are enacted at the Congress may be included. All of Mr. Hemming's listeners left the meeting with a better understanding of the difficulties under which the Commission must function. His visit to the U.S.A., at a time when feeling was very strong against certain activities of part of the Commission, has certainly promoted much-needed good will here.

Among the Lep. Soc. members at the Chicago meetings were: L. Banks, Prof. W.T.M. Forbes, W.J. Gerhard, P.A. Glick, Dr. Wm. Hovanitz, Dr. C.D. Michener, P.S. Remington, F.G. Werner, C.E. Wood, and A.K. Wyatt, and probably others whom we did not see.

C.L.R.



ON THE SO-CALLED "LOWER" TAXONOMIC CATEGORIES

by Sergius G. Kiriakoff

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University of Ghent, Belgium

Students of the order Lepidoptera are well acquainted with the very important specific variability existing among these insects. They are not unacquainted with the technical terms mostly used, such as subspecies, aberration, variety or form. But there is unfortunately no doubt that most of these terms have been and still are used somewhat at random, and some difficulties are likely to arise whenever one becomes aware that a technical term must be applied only to a definite and corresponding taxonomic category. So it might be useful to give a short account of what these taxonomic categories are and which sorts of specific variability have the right to be considered as taxonomic categories.

First, it must be clearly understood that taxonomic categories alone can claim protection under the International Rules of Zoological Nomenclature. In other words, scientific (i.e. Latin) names must be given only to forms which are apt to be classified as belonging to a taxonomic category. This is of paramount importance because not every variation can be so classified, and variations which cannot, must not be given Latin names.

A taxonomist conscious of his task is not content to build his system solely on morphological bases. He simply cannot ignore what has been done in the other branches of the great science of Biology, and if he does not use the data gathered by the Geneticists, Cytologists, Ecologists, and so on, he is doomed to lag hopelessly half a century behind his time.

There is only one systematic category below the species mentioned in the International Rules. This is the "subspecies". This is obviously insufficient. We must go much farther, the more so as there is no "official" definition of the subspecies. We must either ignore this term altogether, or give it a collective meaning, including in it all the systematic categories placed hierarchically below the species. Personally, I would suppress it altogether, because I do not consider the so-called subspecific categories as being in any way inferior to the species; they are rather included in it and placed so to speak on the same horizontal plane,each of them being the sole representative of the species in a given region, habitat or any other milieu. Moreover, there are various sorts of species. It is now generally admitted that monotypic, polymorphic and polytypic species can be recognized, and I refuse to consider, for example, a geographic race as belonging to a lower hierarchical grade than a monotypic species. Instead of calling the discussed categories "subspecific", I choose to call them "intraspecific" (intra= within; not infra= below). And instead of speaking of "subspecies", I speak of "races", which is properly a genetical term, but much used these last years in systematics.

The members of the various races alone are entitled to scientific names. So we must try to define a taxonomic race. If we accept a recent definition (DOBZHANSKY), a race is a group isolated within a species and composed of individuals having certain characters in common. This is insufficient for our purposes and we must add, with BAUER and TIMOFEEFF-RESSOWSKY: "and occupying a definite distribution-area". This is called the "space-factor" and, with one exception, I consider it as a condition sine qua non for granting a race the rank of a systematic category. The words "distribution-area" must be taken in a very broad sense: they not only include geographical or micro-geographical regions, but also all the particular biotopes, such as brackish or sweet water, sunny or shadowy side of a hill, different host plants, different hosts of parasitic animals, etc. The variants corresponding to the above definition are "heterotopic" variants and are entitled to scientific names. They include the geographical and the biological (ecological) races. Much has been said about the precariousness of such division. Dr. MAYR has written a few quite convincing pages about the fact that biological races are but a part or an aspect of the geographical ones. It is true that the limit between these two is not always easy to locate, but, where the Lepidoptera are concerned, this is usually easy, even in cases where the distinction is not merely a matter of different host plants. So I think it advisable to keep both the geographical and the ecological races as intraspecific categories. A third category must be recognized for a few particular cases, viz. for species having parthenogenetical races besides the sexual ones. In some of these cases (as with certain Orthoptera) the geographical factor plays a part as well; elsewhere (certain Psychidae) its intervention is more doubtful. As these cases of parthenogenesis usually seem to be a result of polyploidy (mostly tetraploidy of the parthenogenetic females), we call such races "cytological". In some aspects they are akin to the biological races, as they present reproductive peculiarities.

No other races can be recognized as taxonomic categories, at least in the present state of our knowledge. The so-called chromosome-races are known to exist (the moth Phragmatobia fuliginosa), but we have so far no practical means to identify such races and have to put them aside.

The remaining forms of collective (seasonal, sexual) or individual (the so-called "formae" or aberrations") variation cannot be treated as taxonomic categories and no scientific names should be applied to them. There is no doubt that they may differ widely genetically, that besides mere somations or non-hereditary forms, there are many mutants, even genetic races (e.g. the dominant melanistic mutants of some moths), but in all these cases sufficient ground is wanting for the recognition of such forms as taxonomic categories. In some cases, as e.g. for the polymorphic females of certain butterflies, and for the seasonal forms, or even for the melanistic mutants just alluded to,- names could be retained for purely practical purposes. But one always must bear in mind that such names are not scientific ones and cannot claim protection under the existing rules. They should be written without the author's name, between parentheses or inverted commas, and preceded by the appropriate indication concerning their nature, thus:- Colias eurytheme Bdv. & Lec. (♀ f. "alba"); Papilio marcellus Boisduval (aest. "lecontei"), etc.

With regard to the individual variations, i.e. those not connected with a definite brood, sex, region or biotope, even the above method of using particular names must be abandoned. Such variations have no right whatever to be named, not only because such names are a useless burden, but chiefly because they usually are given only to striking or well-defined variants. Intermediate forms and those with inconspicuous characters are left aside, let alone the forms with cryptic genotypical differences. As there is no possibility to name every more or less aberrant form, no one should be named.

Another intraspecific category is that of the cline (see HUXLEY). In many cases the clines only have an auxiliary value; the use of clines, however, could be much extended, and especially with regard to the Lepidoptera; indeed, many recent faunistic works (i.e. on Mammals) have shown that such a course is not to be disregarded. Successful attempts can, too, be found in FORD's recent book on the British Butterflies (see NEWS I: p.3). Anyway, the use of clines presupposes a thorough knowledge of geographical distribution and of the corresponding variability. Clines have been used so far only for geographical races. Clines should be named, though of course unofficially.

Besides the intraspecific taxonomic categories discussed above, I recognize another complex of so-called "lower" categories, which I term "circumspecific" categories. These comprise the semi-species, the species proper and the ultra-species. The last is the term I use in preference to "super-species" (also called "supraspecies"), on the same grounds as those which have determined me to abandon the term "subspecies".

The semi-species consists of forms which may be partially conspecific, along with others doubtfully specifically separable, evidently of a common origin, and with others which to all purposes are "species in statu nascendi". An example of semi-species is furnished by the small European Blue: Everes argiades Pallas with its partially independent forms E. alcetas Hoffmansegg and E. decolorata Staudinger (cf. LORKOVIC).

The species proper cannot, I think, be split into subdivisions. At least, the terms "monotypic","polymorphic" and "polytypic" species cannot be regarded as taxonomic categories.

The ultra-species consists of species or specific complexes of a common origin, which have reached an undoubted specific status, but are closely related, showing in many cases a geographical vicariousness, when the ultra-species is an equivalent of the "subgenus geographicum" of some authors ("Artenkreis" of RENSCH). However, it is in fact more than that as it is not built on geographical principles alone (cf. KIRIAKOFF).

The semi-species and the ultra-species should be named, though unofficially (as is the case with the cline).

The question of the nomenclature of the intra- and circumspecific taxonomic categories presents certain practical difficulties. I think, however, that these can be solved and propose to discuss the nomenclatorial question in another contribution to this review.

LITERATURE

BAUER, H. and N.W. TIMOFEEFF-RESSOWSKY: Genetik und Evolutionsforschung bei Tiere (in: Die Evolution der Organismen) Jena, 1943.
DOBZHANSKY, T.: Genetics and the Origin of Species, New York, 1937, revised ed. 1941.
FORD, E.B.: Butterflies (in: The New Naturalist), London, 1945.
HUXLEY, J.S.: Clines: an Auxiliary Method in Taxonomy, Bijdr. Dierk. 27, 1939.
KIRIAKOFF, S.G.: La Semi-espèce et la Super-espèce. Bull. Ann. Soc. Ent. Belg. (in print).
LORKOVIC, Z.: Studien über der Speziesbegriff. II. Artberechtigung von Everes argiades Pall. & c., Mitt. Münch. Ent. Ges. 28, 1939.
MAYR, E.: Systematics and the Origin of Species, New York, 1942.
RENSCH, B.: Zoologische Systematik und Artbildungsproblem. Verh. dtsch. Zool. Ges., 1933.

Review of "SYSTEMATIC CATALOGUE OF SPEYERIA (LEPIDOPTERA, NYMPHALIDAE) WITH DESIGNATIONS OF TYPES AND FIXATIONS OF TYPE LOCALITIES", by C.F. dos Passos & L.P. Grey

Ten years ago "Argynnis" stood even above Euphydryas, Melitaea, Brenthis, Phyciodes, and the Blues as the most confused genus confronting the American butterfly students. Different authors accepted a widely varying number of distinct species in the group, many supposed affinities were entirely wrong, and uncorrelated new "races" continued to be described. The challenge of ordering the chaos was grasped at that time by L. Paul Grey, who disposed of his excellent collection of North American Lepidoptera to devote all his time and space to the "Args". He was fortunate to be joined by C.F. dos Passos, who had the means, the equipment, and the methodical mind to scour the scattered literature, visit a number of museums to examine carefully the types, and study the numerous nomenclatorial problems. At that time the Hesperiidae students had been remarkably successful in resolving virtually all taxonomic questions by means of investigations of the male genitalia. Moth specialists also leaned heavily on genitalic characters of both the male and female. But the Papilionoidea, and especially "Argynnis" and the Lycaenidae, were said to offer little or no taxonomic help in the genitalia. Grey's devotion to the project soon made him a highly skillful technician in preparing and studying the male genitalia of "Argynnis" and several other genera. Later he extended his investigation to the female genitalia as the need of supplementary clues became apparent. After several years of study, the authors wrote in 1945: "it is almost a rule in this genus that distant races will vary to nearly unrecognizable extremes", and in another 1945 paper they emphasized: "the excellent usefulness of the male genitalia in giving better classificational results than those hitherto attained by the use of wing pattern, especially in providing unfailing generic characters."

As a result of a genitalic survey of American, European, and Asiatic relatives of Argynnis, the authors found that all of the North American species were homogeneous and consistently differed from all the Old World Argynnis. Thus it was necessary to recognize for the American species a distinct genus, using the oldest available name, Speyeria (Scudder 1872), erected for S. idalia. Differences in the female genitalia indicated a further separation, which resulted in the revival of another Scudder name, Semnopsyche, as a subgenus of Speyeria.

A culmination of the long job was reached with the issuance on December 12, 1947, of the "Systematic Catalogue of Speyeria..." and with it a great service has been done for American Lepidopterists and the morphological groundwork laid for the biological studies of the future, when the genetic affinities can be worked out. The catalogue is a model of painstaking devotion to accuracy and thoroughness. For each accepted specific and racial name the original citation, the synonymy, reference to the type or another typical specimen if figured, type locality, location of the type, reference to early stages, and geographical distribution all are given. The authors dealt with 109 "valid" names and 58 synonyms. The 109 were considered to represent only 13 species, the other 96 being races. The species are as follows:

Speyeria (Speyeria) idalia, nokomis, edwardsii, coronis, zerene, callippe, egleis, atlantis, hydaspe, mormonia and Speyeria (Semnopsyche) diana, cybele, aphrodite

A few controversial points noted in the catalogue seem worthy of mention. 1) Neotype, lectotype, and type locality fixations are profuse. All three are valuable nomenclatorial procedures. However, neotypes in particular need firmly restrictive safeguards and the reviewer believes that one is that all neotypes must be simultaneously plesiotypes, which the present ones certainly are not. In addition, they must be from very close to the type locality and actually be topotypes if at all possible, and the primary type must be virtually certainly destroyed or lost. The latter precautions were presumably taken in this paper. A lectotype seems wholly unnecessary if a single "type" already exists and is so labelled, as appears to be true for several lectotypes in the present paper. Type locality fixations appear to be the most carelessly made here, especially in one glaring case in which Argynnis eurynome tr. f. brucei has its type locality fixed as "Denver, Denver County, Colorado". Any Colorado collector knows that eurynome is the most alpine Speyeria and never approaches the plains around Denver. Since Bruce was the collector, why not designate his favorite collecting ground, Hall Valley, as the type locality? Eurynome abounds up there. 2) The whole business of so dignifying aberrations as to rename homonyms, select type localities, etc. is highly controversial, in spite of Hemming's 1940 "decision"! In three cases Gunder's "transition forms" (= aberrations) were paroled up to a taxonomic status and used for races. However, such relatively minor matters do not fundamentally affect the fine advance made in the publication of the long-awaited Catalogue. Both authors have promised the reviewer that profusely-illustrated geographic analyses of the individual species of Speyeria will follow this catalogue.

C.L. Remington

In response to urgent requests by your editor, Mr. dos Passos has kindly made available a good supply of copies of the Catalogue for Lep. Soc. members who had not previously received it. These may be obtained from the NEWS office, one to a member, until the supply is exhausted. Please do not request a copy if Speyeria falls entirely outside of your interests, since the demand will probably exceed the supply. Please send 5 ¢ in stamps to cover mailing costs.

ABERRATIONS

by Harry K. Clench

The word "aberration" is of current and general usage in the English language, but to Lepidopterists it has acquired a special significance, and the feature has become increasingly controversial to taxonomists and collectors. As defined for the Lepidoptera, an aberration is any specimen deviating markedly in pattern from the other members of its population, race or species, and usually of very rare occurrence, those deviations that are more common being generally called "varieties" or "forms". This definition is clearly that of an arbitrary condition, with its sole homogeneity resting in the fact that the deviation is rare and affects the pattern.

Our first task, therefore, is to make a bit clearer just what an aberration is. One of three general types of conditions may cause an aberration: 1) Environmental modification - extremes of temperature, humidity and other such factors have been proved often responsible for marked pattern deviation; 2) Genetic modification - mutation - is also frequently responsible for aberrations; 3) Pathological modification - it has been shown that disease occasionally is responsible for changes in the pattern of Lepidoptera. Of these three types, the first and third produce variation which is not heritable. The second gives rise to deviations which may be inherited and, granting favorable conditions in nature, ultimately adopted into the fabric of a species or race.

Some aberrants are strikingly - and intriguingly - different from the normal, and therefore have been eagerly sought by collectors and often as eagerly named and described. The rise in popularity of this last practice can be traced easily through the literature. A hundred years ago aberrants often were left unnamed in collections, unless they differed very greatly, when they were usually named - sometimes mistakenly as species. Scudder and Edwards and most others of their era at one time or another found and described some striking pattern deviations. Then perhaps forty or fifty years ago, in response to the rising wave of the practice in Europe engendered by the greatly diminished chances of discovering legitimately nameable species and subspecies, the naming of aberrations became increasingly popular in America. This hobby rose to a peak in the 1920's and 1930's, when J.D. Gunder advertised for, and bought and named aberrants from all over North America, and even erected a scheme for their classification based on types of variation. His classification, due to its inherent artificiality, and despite its rough practicability, was never widely adopted, though the term he devised to replace the, to him apparently distasteful, word "aberration" has lingered. "Transition form" is still to be found occasionally in the literature.

At the present writing the practice of giving a scientific name to an aberration is virtually dead on this side of the Atlantic, though the custom, perhaps deprived of some of its vigor, still prevails in Europe.

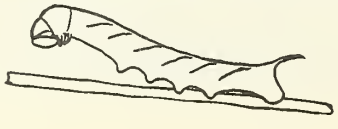
Though nearly every American Lepidopterist is aware of the disadvantages of naming aberrants, it must be pointed out in fairness that it has one practical advantage - the making known in publication of such variations. In the future much use will undoubtedly be made of pattern and other deviations from normal morphology and design in the fields of physiology and genetics, as well as in research on pattern structure and variation. The abnormalities shown in aberrations can be turned to good use in these fields, and it is thus desirable that as many as possible be made known. Such variations, however, can be made public without assigning names to them, a practice unfortunately rare. A few recent papers illustrate the growing weight of opinion among Lepidopterists that striking aberrations, especially of a type common to several related species, deserve to be made known, but not to receive names:

1. "Strymon falacer ab. heathi (Fletcher)" by D.B. Stallings and J.R. Turner (Ent. News 54: 131-132, pl. 2, 1943) not only describes these variations, comparing them with the "species" heathi Fletcher, and gives pertinent data on the specimens concerned, but presents an excellent photographic plate, with normal specimens for comparison.

2. "The Unusual Capture of a Melanistic Pieris napi L. (Lepidoptera)." by P.S. & C.L. Remington (Ent. News 54: 109-110, 1943) describes but does not name the unusual melanic, as well as rare white females of several species of Colias.

3. "Increased Variability Accompanying an Increase in Population in a Colony of Argynnis selene." by J. Tetley (The Entomologist 80: 177-179, pl. 3, 1947) presents valuable information on conditions producing a high percentage of aberrations and gives a photo of several aberrations, deliberately avoiding naming them.

4. Descriptions of two aberrations of Oeneis and one of Glaucopsyche, but no names given, by Y. Okada in Trans. Nippon Lepidopterological Soc. (I, Dec.,1945).



Hy. Edwards.

BRIEF BIOGRAPHIES

9. Henry Edwards (1830-1891)

Born in Ross, Herefordshire, on Aug. 27, 1830, Henry Edwards spent his early life in England, but little is known about his childhood. His father planned to have him become a lawyer, but after Henry's brief study in this field it became apparent that his interests lay elsewhere. He became a clerk in a London counting house for awhile, and also acted in amateur theatricals, a taste which soon started him on a life-long career on the stage. In 1835 he sailed to Australia to appear in several plays, and after an extended residence there, traveled in Peru, Panama, and Mexico, pursuing dramatic activities. In 1865 his colorful journeyings landed him in San Francisco, where for twelve years he was associated with the famous old California theatre. Most of his spare time was spent at the California Academy of Sciences, where he worked with his friend, H.H. Behr, the Academy's curator of Lepidoptera. Edwards later became a trustee and vice-president of the Academy, showing that his scientific activity there was far from sporadic. Boston and New York footlights drew him eastward in 1878-79 and he stayed in New York for ten years, becoming an enthusiastic supporter of the Brooklyn and New York Entomological Societies and editor of Papilio, as well as continuing his successful vocation. In 1889 an opportunity to visit his old "home" in Australia came and he spent a year there as stage manager of an acting company. In 1890 at the age of 60, Edwards returned to New York and although wishing to continue his career, he soon was compelled by poor health to retire to a mountain cottage and died a short time later, on June 9, 1891.

Drama and science may appear to be a surprising mixture, but Edwards was an ardent and energetic enthusiast in both fields. His interest in Lepidoptera appeared early in life, and while in London he started collecting and studying them, under the guidance of Edward Doubleday. His travels provided an opportunity to increase the collection with rare foreign material. At his death his collection, being one of the best in the country, and including his own numerous types as well as many others, was bought by Edwards' friends for the financial benefit of his wife and presented to the American Museum, where it formed the nucleus of their Lepidoptera collection.

Most of his work on this order was on the fauna of the Pacific coast, including descriptions and life histories of both moths and butterflies. While in San Francisco, Edwards enjoyed the friendship of John Muir and the latter sent him many beautiful specimens from the Sierras. Muir wrote him in 1872: "You are now in constant remembrance, because every flying flower is branded with your name." Later, when Edwards had moved to the East, Muir wrote in a letter: "I am glad to see that you are still at work in your delightful studies that keep your heart young and that you have not forgotten me... You are sadly missed in San Francisco." Edwards spent much of his time on the North American Aegeriidae, and many species of that family bear the familiar "Hy.Edw."* appended to their names. One of his most valuable contributions to the literature was the large "Bibliographical Catalogue of the Described Transformations of North American Lepidoptera" (1889). He was also one of the founders and the first editor, for 3 years, of the short-lived New York journal Papilio, devoted exclusively to Lepidoptera.

Henry Edwards was a man of generous and sympathetic nature and had a host of friends wherever his travels took him. His striking appearance and genuine charm were notable; L. O. Howard wrote of him - "I was immensely impressed by Edwards, tall, handsome, cordial man that he was." This engaging air is captured to a large degree in his book of essays called A Mingled Yarn (1883), mostly sketches of his travels, and which includes such intriguing titles as "Bubbles from Bohemia" and "Mid-Summer High Jinks". Not the least of his attributes was the willing and enthusiastic aid he gave to young students in natural history. The late Dr. William Schaus of the National Museum was one of the students who got his start and encouragement from Edwards. Even the above fine portrait (from Ent.News II: pl.6, 1891) cannot do justice to the respected and loved personality of this man, one of the most colorful of American Lepidopterists.

J.E.R.

*Not to be confused with "Edw.", the notation for William Henry Edwards, the great butterfly student, who, though a contemporary of Henry, was not related to him. (See NEWS I:8, 1947).

RECENT LITERATURE ON LEPIDOPTERA

Under this heading are listed each month recent papers from all the scientific journals, from any parts of the world, which are accessible to us through the library of the Museum of Comparative Zoology at Harvard University. Members in countries outside North America are urged to send us references of Lepidoptera papers from journals unavailable to us. Reprints from all members are solicited. Papers devoted entirely to economic aspects, such as insecticides or accounts of damage to human property, will be omitted.

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1. Avinoff, A. & N. Shoumatoff, "An Annotated List of the Butterflies of Jamaica." Ann. Carnegie Museum, vol. 30: pp. 263-295, pl.I. 13 Dec. 1946. Gives annotated list of 115 species of butterflies taken by the authors from 1931 to 1940. Abundant and useful distribution records, but nothing on life history. Another noticeable omission is a list of references used. And it is with regret that we note another aberration named, although the large number of records of it (Lerodea tripuncta ab. sinepuncta) removes it from the usual concept of an aberration. It is interesting to note that the fabled "rarity", Papilio homerus, was found in fair numbers and "is easy to catch." This is another of the series of valuable papers by the authors, Bates, Comstock, Huntington, Carpenter & Lewis, and many others, which have appeared in recent years and made the West Indian butterflies so well known.

2. Bourquin, Fernando, "Metamorfosis de Erebus odoratus (Linné) 1758 (Lep. Het. Noctuidae)." (In Spanish). Acta Zool. Lilloana (Argentina), vol. 3: pp. 239-247, 1 fig., 1 pl. 1946 (1947). Describes life history (total cycle 74 days), figures eggs, larva, pupa, adults, host plant (Acacia decurrens var. dealbata). English summary.

3. Bourquin, Fernando, "Metamorfosis de Aglossa caprealis (Hübner) 1800 (Lep. Het. Pyralidae)." (In Spanish). Acta Zool. Lilloana (Argentina), vol. 3: pp. 249-252, 2 figs., 1 pl. 1946 (1947). Describes life history, gives host plant, figures adults, eggs, larval skin, and pupa. English summary.

4. Bourquin, Fernando, "Metamorfosis de Androcharta rubricincta (Burmeister) 1878 (Lep. Enchromiidae)." (In Spanish). Acta Zool. Lilloana (Argentina), vol.3, pp. 257-262, 3 figs., 1 pl. 1946(1947). Describes life history, figures eggs, larva, pupa, adults, setal pattern. Lettuce used to feed larvae. English summary.

5. Bruner, S.C., "Notas sobre mariposas diurnas miscelánea de Cuba (Lepidoptera: Rhopalocera)." (In Spanish). Mem. Soc. Cubana Hist. Nat., vol. 19: pp. 25-28. 20 July 1947. Notes on Eurema nise & boisduvaliana, Euptoieta claudia, Phyciodes p. phaon, Vanessa atalanta & cardui, Ageronia feronina diasia & amphinome mexicana, Eunica pusilla fairchildi, & Siderone n. nemesis.

6. Chagnon, Gustave, "Le Papillon Sthenopis auratus Grt. (famille des Hépialidés)."(In French). Le Naturaliste Canadien, vol. 74, p.176. May-June 1947. Records capture of this very rare species near St.Faustin,Quebec, in July,1946, the first from Quebec since 1910. Also remarks on other Sthenopis.

7. Clarke,J.F. Gates, "New North American species and new assignments in the genus Chionodes (Lepidoptera: Gelechiidae)." Journ. Wash. Acad. Sci., vol. 37: pp. 243-254, figs. 1-17. 15 July 1947. Assigns Gelechia nigroarbata, G. occlusa, G. permacta to Chionodes. Describes as new and figures male genitalia of: Chionodes asema (Ill. & Pa.), C. iridescens (Wash.), C. johnstoni (Calif.), C. tessa (Calif.), C. acanthocarpae (Tex.), C. canofusella(Tex.), C. bicolor (Calif.), C. petalumensis (Calif.), C. pereyra (Fla.), and C. grandis (Colo.). Figures female genitalia of the 1st four n. spp. and 6th, 8th, and 9th. Types of 4 of n.spp. taken by E.C. Johnston. Some biological notes given.

8. Curtis, W.P., "A List of the Lepidoptera of Dorset. Part II." Trans. Soc. British Ent., vol. 9: pp. 1-134, figs. 1-8. 28 Jan. 1947. Extensive paper for this region. Present part covers "Ocneriadae" (Lymantriidae), Geometridae, Polyplocidae (Thyatiridae), Sphingidae, Notodontidae, Saturniidae. Figures genitalia of Eucestia plagiata & E. efformata. Classification seems unpolished. Repetition of Meyrick's term "phylum" for superfamily unjustified, since this word has a totally different usage universally accepted in Zoological Nomenclature. Of course, modern family endings should be "idae", not "adae".

9. Diakonoff, A., "Case Bearing Lepidoptera I." Treubia(Java), vol.19: pp.75-81, 2 pls. July 1947. Describes as new:Pseudoxia xanthocephala(E. Java), genus Ceratonetha, and C. chrysocrypta(E. Java). Describes and figures also cases of these and 3 other spp.

10. Dickson, C.G.C., "Pairing of Dira clytus L. with D. mintha Geyer (Lep.: Satyridae)." Journ. Ent. Soc. S. Africa, vol. 10: p.126. 30 Aug. 1947. Male clytus and female mintha copulating. Female laid eggs, but all larvae died in first instar. Female may have mated with own species previously.

11. Dickson, C.G.C., "Recently Observed Foodplants of some Cape Lepidopterous larvae." Journ. Ent. Soc. S. Africa, vol. 10: pp. 126-130. 30 Aug. 1947. Gives host plants and notes of 40 spp.

12. Dimic, A., "Effetto delle basse temperature invernali sulle crisalidi della Pieris brassicae L." (In Italian). Riv. di Biol., vol. 38: pp. 171-190. 1946.

13. Gourlay, E.S., "Erechthias fulguritella Walk. (Lepidoptera) Inhabiting Pine Cones." New Zealand Journ. of Science & Tech., vol. 27: pp. 248-250, 2 figs. Nov. 1945.

RECENT LITERATURE (cont.)

14. Hayward, Kenneth J., "Hesperioidea argentina XV (Lep. Rhop. Hesp.)." (In Spanish). Acta Zool. Lilloana (Argentina), vol. 3: pp. 215-230. 1946 (1947). Gives first Argentine records for 7 skippers. Synonymizes three of his own spp. Describes females of 3 spp. and male of 1 sp. for first time. Gives notes on other spp. English summary, no figs.

15. Hayward, Kenneth J., "Una especie y forma nuevas de Hespéridos argentinos (Lep. Rhop. Hesp.)." (In Spanish). Acta Zool. Lilloana (Argentina), vol. 3: pp. 253-255, 1 fig. 1946 (1947). Describes as new: Cogia abdul (Missiones, Arg., & Brazil & Paraguay) and "forma" australis (Caranavi, Bolivia) of Diaeus variegatus. Figures male genitalia of former.

16. Hayward, Kenneth J., "Las especies argentinas de los géneros Mylon y Carrhenes(Lep. Hesperiidae)." (In Spanish). Acta Zool. Lilloana (Argentina), vol. 3: pp. 307-312, 2 pls. 1946 (1947). Describes as new C. lilloi (Macas, Ecuador-F.M.Brown-& Argentina) and discusses C. canescens. Gives key and notes to 4 Argentine Mylon (melander, jason, pulcherius, illineatus). Figures adult of all 6 spp. and male genitalia of all but canescens. English summary.

17. Kaussari, M., "Pectinophora gossypiella." (In Persian). Iran. Dépt. Gén. de la Protect. des Plantes. Lab. Ent. et Phytopath. Appl., No. 3: pp. 12-15. Mar. 1947. French summary.

18. Lepage, H.S., O. Giannotti & A. Orlando, "Combate ao mandrová da mandioca (Erinnys ello (L.))." (In Portuguese). O Biológico (São Paulo), vol. 13: pp. 76-80, 1 pl. 1947.

19. Mathée, J.J., "Phase variation in the lawn caterpillar (Spodoptera abyssinia Guen.)." Journ. Ent. Soc. S. Africa, vol. 10: pp. 16-23. 30 Aug. 1947. Reports changes in larval characters caused by isolation and crowding in rearing.

20. Miner, Floyd D., "Life history of the Diamondback Moth." Journ. Econ. Ent., vol. 40: pp. 581-583, 5 tables. Aug. 1947. Laboratory rearing notes of Plutella maculipennis.

21. Murray, D., "Some unusual forms of genitalia." Ent. Record & Journ. Variation, vol. 59: p. 90. July/Aug. 1947. Matigramma pulverilinea and Zale spp. discussed.

22. Musgrave, A., "Some Butterflies of Australia and the Pacific. The Swallowtails VI." Austr. Mus. Mag., vol. 9: pp. 133-135, 5 photos. 30 Apr. 1947. Concludes series by covering wallacei and macareus groups and genus Cressida,with sev. photos.

23. Shirozu, Takashi, "A Critical study on the zoogeography of Japanese butterflies with special reference to the importance of the West-Chinese elements." (In Japanese). Matsumushi (Japan), vol. 2: pp. 1-8. June 1947. Context unknown to us because of the language barrier.

24. Stempffer, H., "De l'importance en systématique des caractères de l'armure génitale mâle des Lépidoptères." (In French). Revue française de Lépidoptérologie, vol. 10: pp. 217-224, pls. VI-VIII. 1 Apr.1946. A very clear, simple account of the importance of the male genitalia in Lepidoptera taxonomy, with strong emphasis on the Lycaenidae, the family for which Stempffer is perhaps the leading world authority. Illustrated with line drawings of the genitalia of representatives of seven subfamilies of Lycaenidae (Stempffer apparently considers Theclinae, Heodinae, Lampidinae, Everinae, Plebeiinae, Glaucopsychinae, and Lycaenopsinae as subfamilies). It would be interesting to know his basis for referring to Lycaena (phlaeas, heteronea, etc.) as Heodes. His viewpoint is significant, so it is of interest to read that Boisduval "was a mediocre entomologist", and a typical criticism of the archaic taxonomy in Seitz' huge book. The paper closes with a list of the 59 species of French Lycaenidae.

25. Torre y Callejas, Salvador L. de la, "Revisión de las Especies Cubanas de la Familia Papilionidae." (In Spanish). Revista del Inst. de Matanzas (Cuba), vol. 1: pp. 22-43, pl. 1-4, text figs. 1-3. June 1947. Lists 13 species, one subsp., no new names proposed. Adds little or nothing to the information contained in Bates' 1935 "Butterflies of Cuba", but as the work is in Spanish it places the information before amateurs to whom no treatment of the Cuban butterflies has been available in their language since 1881 (Gundlach's "Lepidópteros Cubanos"). All Cuban species are illustrated, and a key given. Brief commentary on geographical distribution, life history, description for each species.(H.K.C.)

26. Torre y Callejas, S.L. de la, "Revisión de las especies cubanas del género Danaus, con la adición de dos nuevas subespecies para Cuba (Lepidópteros. Ropalóceros)." (In Spanish). Mem. Soc. Cubana Hist. Nat., vol. 19: pp. 17-24, 2 pls. 20 July 1947. Keys, photos, and notes on the 7 spp. and races of Danaus in Cuba.

27. Travassos, L., "Contribuçaõ ao conhecimento dos Arctiidae. XII. Gênero Isia Walker, 1856." (In Portuguese). Rev. Brasil. Biol., vol. 7: pp. 181-194, 26 figs. 1947. Not seen by us.

28. Wester, Horace V. & R.A. St. George,"Life History and Control of the Webworm, Homadaula albizziae." Journ. Econ. Ent., vol.40: pp. 546-553, 3 figs. Aug. 1947. Excellent detailed life history notes (no descriptions). New host record is Honey Locust, Gleditschia triacanthos. In six years this Mimosa pest has spread from Washington well into Virginia and Maryland.

QUESTION & ANSWER COLUMN

Professor W. T. M. Forbes, of Cornell University, has kindly consented to prepare answers to questions submitted by members on any aspect of Lepidoptera study, if extensive library research is not necessary. Questions are to be submitted to the editor of the NEWS.

Q. "Is the true genus Thecla reserved for certain exotic species, or was the name dropped for reasons of priority? Will you give me references for the distinguishing characters of Thecla over Strymon?"

A. There are two questions involved: the nomenclatural one as to what is "typical" Thecla, and the splitters vs. lumpers as to how large a genus ought to be. The traditional "Thecla" included the hairstreaks that had only three radial branches, ilicis, calanus, etc. etc., but one or two very early workers named quercus as the type, a species that has four. So if you are a lumper and a strict follower of the "Code" and decisions, chrysalus will be our only Thecla, and all the rest must be called something else (perhaps Strymon, but I am not sure). If you are a traditionalist, all but chrysalus and grunus will be Thecla, and chrysalus will fall to Zephyrus, with several Old World species. If you are a splitter and follower of the Code, of course you limit the name Thecla to quercus and a few Old World relatives, and put all our species in several(ten or more) other genera. The splitters have worked out the names to be used in Europe, North Asia and temperate America by this system, but nobody has yet solved the hundreds of South American "Theclas".

Q. "Why are species like battoides, enoptes, rita, etc., included under Philotes? Are they not further removed from sonorensis than they are from acmon?"

A. Again a question of the splitters vs. the lumpers. These are all pretty closely related but are reported to differ in marked genitalic characters. The grouping you quote is, I suppose, from McDunnough's list, and you should consult Dr. James McDunnough, American Museum of Natural History, for his reasons, which I believe have not been published as a whole. Prof. Vladimir Nabokov of Wellesley College is also working on this group, and may have data on the problem from a world point of view. Psyche 51:104 and 52: 1-61 gives an idea of his point of view, his "Plebejinae" being that portion of the blues, not even including the coppers. Personally I think that all the blues except heteronea, which is structurally a copper, make just about one good genus, for which the oldest name is Plebeius Linnaeus.

- W.T.M. Forbes

Please immediately notify the NEWS editor by card when your address is changed.

BOARD OF SPECIALISTS

The purpose of the Board is to strive toward a high standard of accuracy in published papers by providing authoritative identifications of specimens forming the basis of these published papers. The following rules concerning the service were formulated by the Board:

1. No specimens may be sent until the specialist has replied in writing that he is ready to receive them.
2. No specimens will be accepted unless full data(not key numbers) are on each specimen.
3. A series of each species must be spread, mounted on pins; the others may be in papers.
4. Wherever possible, at least 3 prs. should be sent for determination.
5. The specialist may, if he chooses, retain one-half of the first 8 specimens of each species,but not uniques unless by agreement.
6. Return postage should be provided.
7. Specimens must be carefully packed.

NORTH AMERICA:

Pieridae & Boloria("Brenthis").....A.B. Klots
Dept. of Biology
College of City of N.Y.
New York 10, N.Y.

Satyridae.....C.F. dos Passos
Washington Corners
Mendham, N.J.

Speyeria("Argynnis").....L.P. Grey
Lincoln, Maine

Theclinae(Hairstreaks & allies)...H.K. Clench
Lab. of Vertebrate Zool.
University of Michigan
Ann Arbor, Mich.

Plebejinae (Blues).....V. Nabokov
Museum of Comp. Zool.
Cambridge 38, Mass.

Hesperiidae (Skippers).....A.W. Lindsey
Denison University
Granville, Ohio

Phalaenidae & Notodontidae...J.G. Franclemont
5829 Little Falls Rd.
Arlington, Va.

Catocalinae & Aegeriidae.....A.E. Brower
5 Hospital St.
Augusta, Maine

CENTRAL & SOUTH AMERICA:

Hesperiidae.....E.L. Bell
150-17 Roosevelt Ave.
Flushing L.I., N.Y.

WEST INDIES:

Hesperiidae.....E.L. Bell

All other Rhopalocera.....Eugene Munroe
Institute of Parasitology
Macdonald College,P.Q.,Canada

EUROPE:

All Rhopalocera.....V. Nabokov

NOTICES BY MEMBERS

Members are invited to contribute any notices to this column. There is no cost for this service. Unless withdrawn sooner by the member, notices will appear 3 consecutive times.

Wanted: papered specimens of ACTIAS LUNA, AUTOMERIS IO, CITHERONIA REGALIS, & EACLES IMPERIALIS for cash or rare Catocala. R.C.Casselberry, 53 Edgemont Rd., Scarsdale, N.Y.

Will purchase MORPHO MENELAUS, RHETENOR, SULKOWSKYI by the hundred lot or whatever quantity available. The Butterfly Store, 77 Madison Ave., New York 10, N.Y.

WISH TO PURCHASE Canadian (esp. Arctic) Boloria & Colias. Dr. A.B. Klots, College of City of New York, New York 10, N.Y.

Large quantities of Philotes sonorensis, Anthocaris sara, Speyeria macaria, Tharsalea arota for exchange for N.Am. Rhopalocera,esp. Theclinae and Hesperiidae. Will exchange Speyeria nitocris for S. diana. D.E. Parker, 1033 S. Beacon Ave., Los Angeles 15, Calif.

EAST AFRICAN BUTTERFLIES, for sale or exchange. Want American species, particularly South Am. R.W. Barney, Govt. African School, Kakamega, Kenya, East Africa.

NAMED INDIAN BUTTERFLIES and unnamed moths from districts of Poona, and Dehra-Dun for sale. E. Hug: airmail c/o Mrs. J.Graf, Zeughausstr. 8, Chur, Switzerland, or regular mail: Vaudrevange-Saar, Wilhelmstrasse 3, Terr. Saare, Via Saarlouis, France.

FOR SALE: Insect collection boxes, 9 x 13 x 2 1/2 inches, dovetailed corners, the finest composition pinning bottoms, sanded but not finished, beautiful redwood throughout, hinged, with latches -$2.10 apiece, $24 dozen, F.O.B. Beverly Hills. Bio-Metal Associates, P.O.Box 346, Beverly Hills, Calif.

Papered MANITOBA RHOPALOCERA for exchange for tropical Lepidoptera. About 40 species, all with complete data. List available on request. C.S. Quelch, Transcona, Manitoba.

GUADALCANAL & OKINAWA Lepidoptera (esp.Rhopalocera), of almost every native genus, offered in exchange for needed N.American species. T.W.Davies, 9734 Castlewood St.,Oakland, Cal.

Wanted: Philotes of N. America for a systematic study, for purchase, examination, or exchange. Rudy Mattoni, Dept. of Entomology, Univ. of Calif., Los Angeles 24, Calif.

Will exchange WASHINGTON LEPID. & Coleoptera for N. American Rhopalocera, esp. Euphydryas & Mitoura. Eu. taylori available in large series. Many fine specimens from Olympic Mts. and Puget Sound Basin. D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

Offering a perfect ♂ ERORA LAETA in exchange for Papilio nitra, hollandi, machaon dodi or what have you. Carl Cook, Crailhope, Ky.

LIVING MATERIAL AVAILABLE

The NEWS will welcome especially notices concerning the exchange or sale of Lepidoptera eggs, larvae, and pupae, hoping to revive the old interest in rearing and to re-emphasize the importance of studying the immature stages. Contributors are urged to include accurate locality data with all material sent.

PUPAE OF PAPILIO ZELICAON and P. PHILENOR HIRSUTA from California, full data, offered in exchange for papered butterflies needed for our collections.
Thomas W. Davies, 9734 Castlewood St.
William A. Hammer, 5300 Walnut St.
Oakland, California

Citheronia regalis & Euparthenos nubilis pupae Catocala cara, concumbens, & amatrix eggs. Available alive. Herman Wilhelm, Buckingham Road, R. D. 1, Willimantic, Connecticut.

Available until 1st of March- egg masses of Hemileuca juno, foodplant Mesquite and allied species. Desire to exchange eggs or specimens of Ariz. butterflies & moths for the following Hemileucas: maia,lucina latifascia, grotei diana, burnsi, sororius, and oliviae, also would like to get H. nevadensis from Nevada. Desire Papilios of machaon group also. D.L. Bauer, P.O. Box 469, Yuma, Arizona.

DESIRE LIVING PUPAE OF LYCAENIDAE (esp. Theclinae). Offer in exchange papered Calif. spp. Graham Heid, 11745 Hesby St.,N.Hollywood,Cal.

What have you to offer in exchange for LIVING PUPAE of Telea polyphemus? R.J. Ford, 3266 Ardmore Ave., South Gate, Calif.

Cocoons of Platysamia euryalis("rubra"), gloveri, columbia, and Callosamia angulifera and calleta desired. Correspondence invited. Buy, sell, exchange all kinds of saturniids. R.L. Halbert, 444 N. Normandie Ave., Los Angeles 4, Calif.

Special Notice

Wanted for determination, exchange, or purchase: ARCTIIDAE of the Neotropical Region(especially Central America & West Indies), as well as North American ADELOCEPHALIDAE(Sissphingidae).

Correspondence invited.

Prof. Lauro Travassos, Laboratorio de Helmintologia, Instituto Oswaldo Cruz, Caixa Postal 926, Rio de Janeiro, D. F., BRAZIL.

FOR SALE - THE BERRY COLLECTION

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Turner, A. Jefferis, Dauphin Terr., Brisbane, Queensland, AUSTRALIA.
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Verity, Dr. Roger, Caldina, Firenze, ITALY.
Viette, P., Laboratoire d'Entomologie, 45 bis, rue de Buffon, Paris (5e), FRANCE.
Warren, B.C.S., 3, Augusta Mansions, Folkestone, Kent, ENGLAND.
Williams, Dr. C.B., Rothamstead Exp. Station, Harpenden, Herts., ENGLAND.
Zerkowitz, Albert, 127 West 79th St.,New York 24, N.Y.

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(CHANGE OF ADDRESS) Schoenherr, William H., P.O. Box 673, Danville, Illinois.

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IMPORTANT NOTICE

This number is being mailed to all members, either 1947 or 1948. However, no further numbers will be sent to members until their 1948 dues of $1.50 have been paid.

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A recent number of The Coleopterists' Bulletin reports that insect pins of superior quality are now available from Europe. "The address of the company is as follows: YRAN, Diouha 14, Praha 1, Czechoslovakia. They cost $2.60 a thousand, plus shipping cost,plus duty, which brings the price up to about $4.00 a thousand. It takes about 2 or 3 months for delivery." If several persons cooperate on a combined order, shipping costs will be lower.

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We have just been informed that a severe earthquake destroyed the home and whole town of Pedro Paprzycki. Mr. Paprzycki is a well-known commercial collector of Peruvian butterflies whose prices are reasonable. Several Lep. Soc. members endorse him as dependable. We are presenting this notice because he is in serious financial straits as a result of the disaster and the purchase of specimens from him now will be of special help. His new address is: Lima, Monzon 162, PERU. The airmail rate is 10¢ per 1/2 ounce.

THE LEPIDOPTERISTS' NEWS is the monthly newsletter of The Lepidopterists' Society. Membership is open to anyone interested in the study of butterflies & moths. The 1948 dues, including subscription to the NEWS, are $1.50 for Regular Members and $3.00 or more for Sustaining Members. Please make remittances payable to : Charles L. Remington.
Address all Society correspondence to:
P.O. Box 104, Cambridge 38, Mass., U.S.A.

EDWARDS BROTHERS
Lithoprinters
ANN ARBOR, MICHI
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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P. O. Box 104, Cambridge 38, Massachusetts, U. S. A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON
Volume II February 1948 Number 2

LEPIDOPTERA HIBERNATION

by Paul F. Bruggemann

"One fact which does not easily escape the notice of a collector who has been working in regions with milder winters than those of the Canadian west, is the difficulty of finding hibernating pupae and cocoons. To escape the dangers of sudden and often very great temperature changes and the, perhaps more detrimental, effects of low humidity and high winds, the caterpillars have to select well sheltered locations in which to transform or hibernate. A few of their hiding places were discovered by sheer accident, others after long and diligent search, while many more have eluded detection, e.g. Papilio glaucus canadensis.

"During late summer and early fall the striking black and orange caterpillars of Halisidota maculata are very conspicuous on willows, poplars and Manitoba maple. On the latter one can also easily find those of Acronicta americana. The imagoes, however, are not often taken. Attempts to rear them were none too successful, but in the end I discovered that they pupate under fallen trees and bits of lumber lying on the ground, often gnawing half of the cell into the decaying wood. The "woolly bear" caterpillars of Diacrisia virginica, Isia isabella and Estigmene acrea, which hibernate nearly fully grown, I have often found in mid-winter in oats sheaves, stacked for stock-feed.

"The snuggest hiding place I found one cold winter day while splitting some aspen firewood. Many of our poplars are literally riddled with the burrows of buprestid larvae. From one of their tunnels, laid open by the axe near the centre of the log, protruded two tiny black hairpencils, which turned out to belong to a barely half-grown liparid larva. I managed to rear it to maturity on Populus tremuloides and from the cocoon, spun between the leaves of the foodplant, emerged in July a female Olene vagans. ...

"In some instances our scale-winged beauties choose the wrong place for their winter quarters, as for example, Nymphalis antiopa, which appears to have a predilection for grain shocks with disastrous consequences to themselves in threshing time, especially on cold mornings when they are too torpid to fly. N. californica, which appeared in enormous numbers during 1945 in British Columbia and western Alberta, seems to share this habit. My only specimen of N. j-album was found hibernating in the folds of a gunny sack in an open shed."

COLIAS IN CANADA

The season summary report kindly forwarded by Dr. William Hovanitz (NEWS, I: p. 96) also included several other exceptionally significant notes on Colias in northwestern Canada: "Food plants tentatively identified for these three species were: Salix sp. in grassy muskegs for Colias gigantea, Hedysarum sp. in prairie areas for Colias christina and Trifolium sp. for Colias philodice in meadows." At Ft. Smith, gigantea was "found fairly plentiful in Salix muskegs. Only one specimen of C. christina was taken here at this time and that one near some Hedysarum growing on the edge of the Wood Buffalo Park. ... Additional legumes were found to be utilized by C. christina for larval food plants but C. gigantea was always restricted to Salix."

"In order to compare the Colias of the alpine zones of the Rockies with those of the true arctic, study was made of C. meadi, C. pelidne, and C. nastes in Alberta. C. meadi was found at elevations of 6500 to 9000 feet on arid hill slopes in connection with Astragalus, C. pelidne was found at 7000 to 9000 feet in wetter areas laying eggs on Vaccinium sp. (dwarf) and C. nastes was found at 8000 to 9000 feet in elevation. .., Colias christina were studied at lower elevations ranging from 3000 to 5000 feet."

"On July 24th to 26th, Colias gigantea were noted to have nearly disappeared in the vicinity of Fort Smith but now Colias christina were most abundant. Evidence for hybridization between these two species at this place was obtained. ... Evidence of hybridization between these species in one locality near Grande Prairie was obtained. ... Near Jasper, C. christina was found in large numbers and evidence of probable hybridization between this species and C. philodice was found. Considerable additional work is required in order to understand the nature of the hybridization between these species of Colias. Field work alone cannot answer all questions of course. Colias boothi...appears to be a product of hybridization between C. hecla and C. nastes. Whether it is or not still remains to be shown. The food plants, often the best diagnostic character of these species, are unknown as yet. Local collectors can be of tremendous help in population problems such as these by obtaining data on food plants of the larvae, on retaining data on copulating pairs, on collecting data on the frequency of color phases in a population, etc." Collectors who wish to be of help are urged to get in touch with Dr. William Hovanitz, University of Michigan, Ann Arbor, Mich.

SMITHSONIAN INSTITUTION
SEP 15 1949
NATIONAL MUSEUM

Theo. D. A. Cockerell

THEODORE DRU ALISON COCKERELL (1866-1948)

Just as this issue was being prepared for printing we were deeply grieved to learn of the passing of Professor Cockerell at the end of January. Like hundreds of entomologists in all parts of the world, we are glad to have had him as a personal friend, and it seems unbelievable that he has passed away. He had become almost a legend of indestructibility. Last summer we stopped briefly at Boulder, Colorado, to pay our respects. He was convalescing from a hospital siege and was vigorous and clear-minded then, describing one new species of bee each day. He and Mrs. Cockerell were at their winter home in San Diego, California, at the time of his passing.

He was born and passed his childhood in England, at Beckenham and Margate, spending much of his time outdoors delving into natural history. He wrote: "My own interest in natural history began as early as I can remember anything." At the age of 12 he went to Madeira, and there made what he calls his "first scientific discovery" - the previously unknown larva of the butterfly Pyrameis indica occidentalis.

At the age of 21 he was forced by failing health to give up a commercial position in London and moved to Colorado. He lived there for three years in Wet Mountain Valley and took up the study of Colorado biology, specializing in Lepidoptera and flowers. Returning to England, he worked in the British Museum for a year. He then spent two years as museum curator in Jamaica, a position he was forced to abandon, again from ill health, and returned to the Rocky Mts. In 1904 he moved to Boulder, Colorado, where he began his association with the University and eventually became Professor of Zoology. He retired in 1935.

While Professor Cockerell worked especially with the insects of the southwestern U.S.A., he also traveled extensively, his trips including South America, much of Africa, Europe, Siberia, Japan, and Australia. Only a year ago he and Mrs. Cockerell returned from one year at Tegucigalpa, Honduras.

Cockerell always referred to himself as a naturalist, and he had tremendously broad interests. He devoted himself most intensively to work on bees and fossil insects, but Lepidoptera, molluscs, living and fossil plants, scale insects and mealy bugs, sunflower genetics, fishes, and to a lesser degree other groups of animals were the subjects of his very numerous published papers. He wrote two well-known books: a textbook on general Zoology, and Zoology of Colorado. In addition to scientific works, he wrote innumerable poems and at least two plays.

Most of Cockerell's work with Lepidoptera was done very early, but he always retained an interest in the group, and only recently published a review of Ford's Butterflies. A New Mexico race of Speyeria nokomis was named by the Cockerells, as will be seen in the new dos Passos and Grey Speyeria Catalogue.

It would be a most incomplete notice that did not include Mrs. Willmatte P. Cockerell, the Professor's devoted wife and inseparable companion from the time of their marriage. She undoubtedly is a primary reason for his long, constantly fruitful life.

In his delightful autobiographic "Recollections of a Naturalist" (Bios 1935 to 1939), Cockerell wrote: "The scientific man is always on the road, never at the journey's end. The road leads on and on, over hills and mountains, and he who travels on it knows that he will eventually faint and fall, his best hope being that some one will take up his burden and carry it another stage beyond."

Charles & Jeanne Remington

The Peterson formula for preserving larvae (called the "KAAD Mixture"), mentioned on page 2 (January issue) is as follows:

Kerosene	- 1 part
Ethyl Alcohol	- 10 parts
Acetic Acid(Glac.)	- 1 part
Dioxin	- 1 part

The dioxin needs to be used only if the kerosene is a type not miscible (freely mixing) with ethyl alcohol. This KAAD mixture should be used for killing and fixing specimens, so larvae should be dropped into the fluid while alive. The solution kills quickly, prevents blackening, and inflates the specimen slightly, so that all the important eversible glands (such as the osmaterium of Papilio larvae) are everted. It is important that the specimen be kept in a flat position while dying and hardening. Otherwise, twisted specimens result. It is usually most satisfactory to carry the fluid into the field and drop the larvae in it as soon as found. If internal dissections are planned, the amount of kerosene given above should be doubled. Otherwise, if inflation is too great, reduce the percentage of kerosene until results are satisfactory. Larvae may be kept in the fixative preferably for 1 or 2 hours, but up to 2 days, and then moved into 95% ethyl alcohol for permanent preserving.

THE NOMENCLATURE OF THE SPECIFIC COMPLEX

by Sergius G. Kiriakoff
Zoological Laboratories
University of Ghent, Belgium

Under the existing International Rules of Zoological Nomenclature there is only one way to name intraspecific complexes. Art. 2 of the Rules states: "The scientific designation of animals is ... trinominal for subspecies", and Art. 17 of the same: "If it is desired to cite the subspecific name, such name is written immediately following the specific name, without the interposition of any mark of punctuation".

This is quite obviously insufficient. Indeed, taxonomic practice recognizes several kinds of intraspecific (corresponding partly to the official "subspecies") and circumspecific (so far without official recognition) complexes of different natures. It seems to me very important that a scientific name should be so composed as to give a clear indication of the nature of the given complex. The following scheme is one I have drawn up, largely according to the views of Professor J.S. Huxley (Evolution, London 1942), who was, as far as I am aware, the first to propose the use of capital letters to distinguish between the different aspects of intraspecific variations.

A. INTRASPECIFIC CATEGORIES:

1. Geographical race - The name of such a race follows the specific name and is preceded by a capital G.

2. Ecological race - As above, but preceded by a capital OE.

3. Cytological race - As above, but preceded by a capital C.

4. Micro-race (Huxley prefers the term "microsubspecies" to this term, which is from Dobzhansky)- Should not be named. However, if it should later be preferred to name a micro-race, the use of quadrinomials could not, it seems, be avoided. Such quadrinomials become eventually quinquenomials if a subgeneric name is cited!

5. Cline - Composed of the names of the two peripheric (initial and terminal) races which the cline includes, this combination being preceded by the abbreviation Cl (proposed by Huxley). Each of the peripheric races is named as under 1 or 2 above.

The arrangement of 1, 2, and 3 is the one proposed by Huxley, only I substitute an OE for the E of Huxley; it stands for "intraspecies oecologica"; Ecology is spelled in many languages with an initial OE.

B. CIRCUMSPECIFIC CATEGORIES:

1. Species proper - Named binomially.

2. Semi-species - The name of the first described form included in a semispecific complex precedes that of each of the remaining forms involved and is placed in parentheses. If the semi-specific name is that of the first described form involved, this last is of course repeated and parentheses used as above.

3. Ultra-species - Named binomially; the name used is that of the first described form, preceded by a capital U. The name of each form included in an ultra-species is written following the name of the first described form in the complex. The prior form is placed in ordinary parentheses- ( ) - if the included form is a race or a semi-species, and in square parentheses- [ ] - if it is a good species.

I do not think it best to restrict the term "ultra-species"(super-species of Mayr)to sympatric forms, but to include in it the semi-species and the sibling-species. The reason is that I cannot see why, if geographical isolation should be selected to serve as the basis for a superspecific complex, ecological and physiological isolation should not. If, however, it seems necessary to make a distinction between sympatric and allopatric ultra-species, the term "ultra-species" could be applied to the first, with "super-species" as a geographical subgenus.

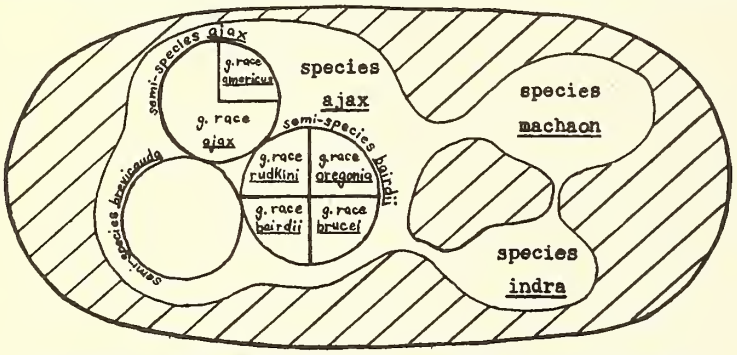
For the proposed terminology of intra- and circumspecific categories, my article "On the So-called "Lower" Taxonomic Categories" should be consulted. (Lep. News II:3-4).

The writer's work is under the direction of Prof. Dr. P. van Oye of the Zoological Laboratories of Ghent State University, Belgium.

Too little is now known of the genetics of American or any other butterflies immediately to endorse or discard M. Kiriakoff's system. However, it does have attractive possibilities as an easy shorthand for expressing genetics in taxonomy. In order to permit NEWS readers to understand it more clearly, an attempt has been made to apply the scheme to a group of well-known American butterflies. First it is necessary to emphasize the fact that the following situation is hypothetical, having no breeding evidence known to the writer to support it. It is used mainly to arrange a realistic background on which to apply Kiriakoff's scheme.

HYPOTHESIS: The American Papilios including ajax L. (asterius Cram), brevicauda Saund., bairdii Edw., nitra Edw., zelicaon Luc., machaon L., and indra Reak., etc., are all closely related, having relatively recently become separated. So all members of this group produce at least a small percentage of fertile offspring when cross-mated. 5% of the following crosses are fertile:(ajax x machaon),(machaon x indra),(ajax x indra);70% of the offspring of the following are fertile:(ajax x brevicauda),(ajax x bairdii),(brevicauda x bairdii); 90% of the offspring of the following are fertile:(ajax x americus),(brucei x bairdii),(bairdii x rudkini),(rudkini x brucei),(rudkini x oregonia),(brucei x oregonia),(bairdii x oregonia).

CONCLUSIONS: Using inter-specific sterility as the primary taxonomic criterion, it is clear that the above complex should be designated the ultra-species machaon. This ultra-species contains 3 species: machaon, indra, and ajax (using the oldest name in each group). The species ajax contains three semi-species: ajax, bairdii, and brevicauda. P. ajax includes two geographic races:ajax and americus. P.bairdii includes the geographic races: bairdii, brucei, rudkini, and oregonia; and bairdii is also,in some parts of its range, the lowland (ecological) race with the high-mountain brucei and rudkini. For the present examples the semi-species and races of machaon and indra will not be considered.



HYPOTHETICAL DIAGRAM OF THE ULTRA-SPECIES PAPILIO U.MACHAON
with the components of the species ajax shown in detail

APPLICATION: Using Kiriakoff's scheme, names of the above organisms would be written in the following ways, in a series of sample combinations:

a. Papilio U.[machaon] indra Reak.
b. Papilio U.[machaon] machaon L.
c. Papilio U.(machaon) brevicauda Saund.
d. Papilio U.(machaon) G.oregonia Edw.
e. Papilio (ajax) ajax L.
f. Papilio (ajax) bairdii Edw.
g. Papilio (ajax) G.oregonia Edw.
h. Papilio (ajax) OE.brucei Edw.
i. Papilio ajax Cl.(G.americus - G.ajax) - for Mexico populations
j. Papilio (Papilio) U.machaon (ajax) bairdii G.brucei Edw.
k. Papilio (Battus) philenor G.acauda Oberth.

In the above examples, P.machaon is written as an ultra-species (a-d,j) or a species (b). P.indra is written as a species (a); P.brevicauda (c) as a semi-species; P.oregonia (d,g), P.americus (i), and P.acauda (k) as geographic races; P.ajax as a species (e-h,i,j), a semi-species (e), and a geographical race (i); P.brucei as a geographical race (j) and as an ecological race (h); P.bairdii as a semi-species (f,j); and P.philenor as a species (k). The amazing amount of information that can be expressed briefly by the Kiriakoff system is shown in (j) and (k). The former shows that machaon is highly intersterile with ajax, that ajax has a higher fertility in crosses with bairdii but is still quite well isolated reproductively, and that bairdii and brucei are highly interfertile. There machaon is written as an ultra-species, ajax as a species, bairdii as a semi-species, and brucei as a geographical race, and all are in the subgenus Papilio. The last example (k) shows philenor as a species, with acauda as a geographical race, and both in the subgenus Battus.

CATEGORIES BELOW CLINE: As Kiriakoff emphasizes (NEWS II:3-4), varieties, seasonal, sexual, and other "forms", and aberrations (incl. "transition forms") should not be named and are entitled to no protection under the legal Code of Nomenclature. If Lepidopterists insist on using them, his suggested system would be applied as follows:

1. Papilio glaucus Linné (♀f."turnus")
2. Colias U.(chrysotheme) philodice Latr. (ab."nigridice")
3. Colias (Zerene) caesonia Stoll (f.autum."rosa")
4. Speyeria (Semnopsyche) aphrodite G.manitoba Cherm.& Cherm. (tr.f."mayae")
5. Everes comyntas Godt. (♀f.vern."meinersi")
6. Strymon falacer Godt. (ab."heathi")

C.L. Remington

A. Radcliffe Grote

BRIEF BIOGRAPHIES

10. Augustus Radcliffe Grote (1841-1903)

In the summers around 1854 Brooklyn Lepidopterists became accustomed to sudden visits from three small boys, who had been eagerly collecting insects in the wild areas which were still abundant around the city. The boys were especially interested in identifying their captures and of learning the methods of preparation as well as the biology of the species. One of these boys, Augustus Grote, later became an acknowledged authority on Lepidoptera. He had been born in England, in the Liverpool suburb called Aigburt, on Feb. 7, 1841,but came to the United States in early childhood with his parents, and grew up in Brooklyn. Around 1870-71 he resided in Alabama,where he became interested in the Southern insect fauna and studied some of the lepidopterous economic pests. In 1873 he returned north to become the curator of the Buffalo (N.Y.)Society of Natural Sciences and remained there for nine very active years. In 1882 he moved to Brighton, Staten Island,New York, but after two years he left for Germany, his father's home, and resided in Bremen. In 1895 he moved to Hildesheim, Germany, where he was Director of the Roemer Museum until his death on Sept. 12, 1903.

Grote was a serious student of Lepidoptera and did careful, accurate work. He published about 100 papers on the order and described over 1000 species, mostly Phalaenidae (Noctuidae). He was the first North American to work up this family, and his "Checklist of the Noctuidae of North America" appeared in 1876. He also studied other families of moths such as the Sphingidae and Zygaenidae, on which his catalogues were published in 1873. One of Grote's contributions to the whole field of moth study was his comprehensive checklist of all North American moths (1882), and the identification of species described by Guenée and Walker. In much of his work, especially while in Buffalo, he cooperated with Coleman T. Robinson, a wealthy New York broker, and the "G. & R." team described many species of moths together. (Most of the Grote and Robinson types are now in the American Museum, while Grote's valuable personal collection was sold to the British Museum at his death.) He also contributed to the economic field, through a series of fine papers on the southern cotton caterpillar (Alabama argillacea Hbn.) and the pine Nephopteryx. In 1871 he went to Washington to advise a government appropriation for the investigation of the cotton pest, and was among the foremost to advocate the migration theory in regard to the insect. Other papers of Grote reveal his interest in wing and antennal structure and "genealogy" of Lepidoptera.

Grote was an excellent writer and was connected with three entomological journals, all of which were unfortunately short-lived. He founded and edited the first volume (1879) of the North American Entomologist while at the Buffalo Society, and was co-editor of The Practical Entomologist,founded in 1865 by the American Entomological Society in Philadelphia. He also served on the publication committee for Papilio, and was thereby associated with Henry Edwards, its editor.

Personally, this Lepidopterist must have been an interesting individual. His numerous non-scientific avocations enriched the life of his family (including six children) with such cultural accomplishments as poetry and music, and a number of his poems were published. He would often relax in spare hours to write opera music,or practice the programs for his position as church organist. He was a philosopher and theologian, and even an authority on ancient Rome. With these numerous sidelights it is small wonder that his friends described him as a delightful companion and good conversationalist. The portrait shown above is apparently unpublished. It is presented through the courtesy of the Museum of Comparative Zoology at Harvard University. It was made by H.L. Bliss of Buffalo, N.Y. On the back is written: "A.R. Grote June, 1874" in Grote's hand. The signature below the portrait is a facsimile from a letter also in the M.C.Z. files written to Alexander Agassiz Nov. 18, 1897, from Hildesheim, Germany, requesting for the Roemer Museum a publication on American Paleontology.

A bit of Grote's unassuming, knowledge-seeking attitude towards biological work is seen in the following, an apt comment on scientific progress, in one of his papers correcting another Lepidopterist's work: "While it is proverbially human to err, it is a wise dispensation of Providence that out of all our errors there comes light - if not for us, then for those who come after us."

J.E.R.

29. Beaufoy, S., "British hairstreaks." Country Life (London), vol. 102: pp. 376-377. 22 Aug. 1947. Includes: Callophrys rubi, Thecla quercus, T. betulae, Strymonidia w-album, S. pruni. Not seen by us.

30. Beebe, William, "Scale Adaptation and Utilization in Aesiocopa patulana Walker(Lepidoptera, Heterocera, Tortricidae)." Zoologica (N.Y.), vol. 32: pp. 147-152, figs. 1-6. 12 Nov. 1947. Specimens taken at Rancho Grande, Venezuela, identified by J. F.G. Clarke and T.N. Freeman. An interesting detailed account of a challenging habit pattern and structure adaptation in this moth, which laid 300 eggs in a round mass and erected an upright "palisade" of sharp scales completely surrounding the eggs, apparently protecting them from predators. Clear photographs and drawings.

31. Beirne, Bryan P., "The Origin and History of the British Macro-Lepidoptera." Trans. Royal Ent. Soc. London, vol. 98: pp. 273-372, 45 maps. 23 Oct. 1947. The fact that the British Lepidoptera are far better known than those of any comparable region in the world permits a biological historian like Dr. Beirne to view the fauna and to attempt to reach conclusions regarding its origin and history. Beirne concludes that all the "existing species of Macrolepidoptera became established...by migration from abroad", and that the five species of moths still known only from Britain will be found elsewhere eventually. He bases his reasoning on ecological, taxonomic, and zoogeographical evidence, and maintains that nearly all the species arrived via land connections, with a few others introduced by man or established by overseas migration. The British Macrolepidoptera are traced back 120,000 years, during which time they arrived in six waves, three waves from cold regions alternating with waves from warmer regions as climatic changes occurred. One wave, the last, following the last glacial period and preceding the sea barrier between England and the Continent, brought 46% of the present species. Beirne notes that species of Lepidoptera must require over 120,000 years to evolve, that strong subspecies develop in about 50,000 years, weaker races in 25,000, and small highly endemic races (such as Lycaena d. dispar) in about 8,000 years. The work is concluded by references and an index to spp.

32. Bentinck, G.A., "Pammene snellenana mihi nov. spec." Tijdschrift v. Ent. (Netherlands), vol. 88: pp. 155-156(1945). 1 Oct. 1947. Describes as new P. vernana(of Snellen, nec. Knaggs), actually giving no shred of description, referring instead to Snellen's book. Says the genitalia are distinctive but does not show how or give figures.

33. Blathwayt, E.C.H., "Effects of the Severe Weather on Spring Lepidoptera at Weston-Super-Mare up till End of April 1947." Ent. Rec. & Journ. Variation, vol. 59: p. 120. Oct. 1947.

34. Blom, W.L., "Een nieuwe vindplaats van Polyommatus optilete Knoch." (In Dutch). Tijdschrift v. Ent. (Netherlands), vol.88: pp. 331-333 (1945). 1 Oct. 1947. Describes and names six new varieties from Norway.

35. Bourgogne, Jean, "Quelques observations relatives au 'procès de l'année 1945'." (In French). L'Entomologiste (Paris), vol. 3: pp. 55-58. March 1947. A summary of the 1947 Lepidoptera season in France, dealing almost entirely with butterflies.

36. Bourquin, Fernando, "Metamorfosis de Tolype pauperata (Burmeister), 1878." (In Spanish). Rev. Soc. Ent. Argentina, vol. 13: pp. 301-308, 1 fig. 10 June 1947. Life history, with descriptions of larva and pupa and figures of latter. Two spp. of parasites found.

37. Busck, August, "Family Prodoxidae. Synoptic Table of Genera." in Susan Delano McKelvey, "Yuccas of the Southwestern United States", pt. 2, 192 pp., 65 pls. Arnold Arboretum, 1947. Kindly brought to our attention by Prof. I.M. Johnston. This monograph of the Yucca plants is indispensable to anyone working on Yucca insects. Mrs. McKelvey collected yucca moths during her years of travel and sent them to Mr. Busck for identification. Pp. 180-185 of the monograph report the results of his careful study of the 2000 specimens of Prodoxidae. Busck wrote: "The small number of species represented was disappointing, because we had somehow suspected, that each species of Yucca would harbor a different species of each of the two genera involved." Actually, there are only 5 Tegeticula and 9 Prodoxus, mostly on the California Yuccae. Busck synonymizes Riley's intermedius under T. yuccasella, finding it to be a rather common abnormality in which the females have the tentacles on the maxillary palpi undeveloped. Busck considered T. apicella and extranea as color varieties of T.maculata. Thus, of the 11 spp. in the family accepted by Busck, 10 were named by C.V. Riley in his remarkable studies on the group prior to 1893. The collection included the first T. paradoxa, P. pulverulentus, and P. sordidus since Riley's time. The synoptic table gives the generic and specific synonymy of the family, with the primary reference for each name, the distribution, and detailed listing of all the host spp. of Yucca, the latter prepared by Mrs. McKelvey. Eleven other species of moths found on the yuccas are listed, but no mention of Megathymus.

38. Cherian, M.C. & M.S. Kylasam, "Studies on the Spotted Bollworms of Cotton - Earias fabia S., and E. insulana B." Journ. Bombay Nat. Hist. Soc., vol. 46: pp. 658-667. Apr. 1947.

39. Corbet, A. Steven, "Papers on Malaysian Rhopalocera: II. The Type of Papilio leucostictos Gmelin, 1790." The Entomologist, vol. 80: pp. 228-229, pl. IV, fig. 1. Oct. 1947.

40. Darlow, H.M., "Observation on the Butterflies of Ceylon." The Entomologist, vol. 80: pp. 204-205. Sept. 1947.

41. Darlow, H.M., "Collecting Notes for 1947." Ent. Rec. & Journ. Variation, vol. 59: pp. 117-119. Oct. 1947.

42. Daviault, L., "L'anisote de l'erable." (In French). Fôret Québecoise, vol. 12: pp. 495-496. Sept. 1947. Anisota rubicunda and maple. Not seen by us.

43. Diakonoff, A., "A Caterpillar occurring in Nepenthes pitchers (Lepidoptera: Noctuidae)." Proc. Royal Ent. Soc. London (A), vol. 22: pp. 70-71. 20 Sept. 1947. Studies made while author was Japanese prisoner on Sumatra. Nepenthes is a genus of pitcher plants - plants trapping insects in water caught from rain in modified leaves. Diakonoff found larvae of the noctuid, Eublemma radda Swinhoe, resting in the tiny pitcher, with half the body (either half) immersed in the water for many hours at a time. The larvae grew and pupated without damaging the plant at all, so he concludes they fed on the insect remains "heaped in abundance on the bottom of every pitcher." Relatively few Lepidoptera are known to feed on animal matter, so every example is of special interest.

44. Dillon, Lawrence S., "Some New Subspecies of Butterflies from Dominica, B.W.I." Bull. Brooklyn Ent. Soc., vol.42: pp.97-102. "June" (Dec.) 1947. Describes as new: Appias(Glutophrissa)drusilla subsp.comstocki, Phoebis agarithe subsp. pupillata, Eurema venusta subsp. emanona, Panoquina nyctelia subsp. agari, all from Dominica. No figures! Brief notes on Eurema nise and E. venusta (selecting Colombia as type locality on flimsy grounds).

45. Doets, C., "Zimmermannia heringiella nov. spec. Nepticulidae (Lepidoptera)." Tijdschrift v. Ent. (Netherlands), vol.88: pp. 504-506, 5 figs. (1945). 1 Oct. 1947. Careful description. Male genitalia described and figured. Reared from mines in oak in Holland. Adult and mine figured.

46. Downes, J.A., "Notes on Herse convolvuli L., Pararge aegeria L. and other Uncommon Scottish Lepidoptera." Ent. Monthly Mag., vol.83: pp.217-218. Sept. 1947.

47. Eliot, Nevill,"More on Continental Drift, Precis lavinia Hb. and P. villida F." The Entomologist,vol.80: pp.230-234. Oct. 1947.

48. Federley, Harry, "Die Konjugation der Chromosomen bei den Lepidopteren." (In German). Commentationes Biologicae (Helsingfors, Finland), vol.9, no.13: 12 pp., 8 figs. 1947. This author is one of the few ever to study Lepidoptera chromosomes and is probably the most active of all in this respect. The present paper describes and figures meiosis in Trichiura crataegi L. (Lasiocampidae). The haploid number is 28 (rarely 29). The figures show chiasmata and the location of centromeres in these Lepidoptera chromosomes.

49. Federley, Harry, "Polyploidie und Non-Disjunction in der Gametogenese einiger Lepidopteren." (In German). Commentationes Biologicae, vol.9, no.17: 9 pp., 4 figs. 1947. Discusses and illustrates both diploid and haploid metaphase plates of spermatogenesis of Poecilocampa populi (n=36), Dasychira selenitica(n=22), and Dicranura vinnula (n=21). Especially interesting and significant is a series of six metaphases of the offspring of a cross between vars. fennica and germanica of D.vinnula, showing 27, 39, 41, 39, 42, 42 in different cells studied.

50. Fleming, Henry, "Sphingidae(Moths) of Rancho Grande, North Central Venezuela." Zoologica (N.Y.), vol.32: pp.133-145. 12 Nov. 1947. 67 spp. taken at light. Annotated list, giving dates and abundance. Commonest was Erinnyis ello. Many of the species are also North American. In general best collecting hours were 7 to 11 and 4 to dawn. Makes excellent point that explanation of abundance of moths at light during rain must not be that the rain produces emergence, since the swarms coming in during very sudden, brief tropical showers would not have time for expansion and flight.

51. Ford, E.B., "A Murexide test for the recognition of pterins in intact insects." Proc. Royal Ent. Soc. London (A), vol.22: pp.72-76. 20 Sept. 1947. The white and yellow pigments of pierid butterflies are known as pterines and are formed by utilizing uric acid which is normally a poisonous waste product. Dr. Ford found a simple test to detect these pterines even in a small spot on a wing, by exposing the specimen to chlorine. The white pterine is leucopterin ($C_6H_5O_3N_5$) and the yellow is xanthopterin ($C_6H_5O_2N_5$). Ford tested 17 spp. of 4 subfamilies of Pieridae and found all positive. Tests on 20 spp. of ten other families of butterflies were all negative.

52. Ford, E.B., "Studies on the chemistry of pigments in the Lepidoptera, with reference to their bearing on systematics. 5. Pseudopontia paradoxa Felder." Proc. Royal Ent. Soc. London(A), vol.22: pp.77-78. 20 Sept. 1947. This very strange tropical African butterfly is placed in its own subfamily of Pieridae, but it appears to be a pierid since the Murexide test (see#51) is positive. Among other peculiarities, P. paradoxa has no club on the antenna.

53. Ford, L.T., "The Psychidae." Proc. & Trans. S. London Ent. & N.H.Soc., 1945-46: pp.103-110, pl.11, col. 23 Nov. 1946. Discussion of family, with descriptions of adults, cases and larvae of the 18 spp. in Britain. Good colored plate of adults of 13 spp. and cases of 15 spp.

54. Ford, R.L.E., "The use of common salt for keeping down vegetable and other moulds during breeding experiments." Proc. Royal Ent. Soc. London (A), vol.22: pp.86-88. 20 Sept. 1947. Found that moulds in breeding pans permitted only about 15% of larvae to produce adults, but spraying a solution of 1 part table salt to 50 parts water on the leaves and soil of the pans resulted in about 80% adult production. This method may apply only to microlepidoptera breeding in rolled leaves, flower buds, leaf mines etc. It will also help control mould in debris and excrement on the bottom of breeding cages for any Lepidoptera and has no harmful effect on species which burrow into the soil to pupate. The exact salt concentration of the spray is important.

55. Fox, Richard M. & Jean W., "Ithomiinae (Lepidoptera) of Rancho Grande, Venezuela, Including Two New Species." Zoologica(N.Y.), vol.32: pp.173-178, 1 pl. 29 Dec. 1947. Annotated checklist of 30 spp. of 19 genera found in 800 specimens. The new spp. are: Pteronymia beebei and P. nubivaga. The holotypes and ♂ genitalia of both spp. figured, with ♂ genitalia of P. artena (Hew.).

RECENT LITERATURE (cont.)

56. Gallay, Henry, "Une remarquable aberration: Melanargia galathea ab. coronae nov. (Lep.,Satyridae)." (In French). Mitt. Schweiz. Ent. Ges. (Switzerland), vol. 20: pp. 594-596, 4 photos. 8 Oct. 1947. It happens in Switzerland, too!

57. Huggins, H.C., "Anania nubilalis (Lep. Pyralidae) in South Essex." The Entomologist, vol. 80: pp. 206-207. Sept. 1947. Species appears to be establishing itself in England.

58. Jackson,R.A., "Causes for Seasonal Variation in the Numbers of Lepidoptera." Proc. & Trans. S. London Ent. & N.H. Soc., 1945-46: pp.43-51. 23 Nov. 1946.

59. Krogerus, Harry, "Die Veränderungen der Schmetterlingsfauna des Lojo-Gebietes in Südwestfinnland Während der letzten Jahrzehnte." (In German). Acta Soc. Pro Fauna & Flora Fennica (Helsingfors), vol. 65, no. 1: 52 pp. 1945. Detailed report on population fluctuations of various butterflies and moths in S.W. Finland.

60. Landsman, H., "Argynnis aglaja L. uit de Krimpenerwaard." (In Dutch). Tijdschrift v. Ent. (Netherlands), vol. 88: pp. 395-396 (1945). 1 Oct. 1947.

61. Lempke, B.J., "Cabera exanthemata Scop. and its forms." Tijdschrift v. Ent. (Netherlands, vol. 88: pp. 347-352, figs. 1-12 (1945). 1 Oct. 1947. Careful treatment of the 14 "forms", including 6 new, with all but 2 sketched. Genetics would seem the most successful approach to these forms.

62. Lepesme, P., "Les Insectes des Palmiers." (In French). 904 pp., 638 figs. Paris, 1947. An elaborate treatise on the ecological, systematic, and economic aspects of the insects of the palms. Most of the Lepidoptera are phytophagous and attack the leaves, although a few are saprophagous and a few eat the flowers and fruit. The systematic portion on Lepidoptera is on pp.283-429, with figs. 208-312, and was prepared by J. Bourgogne. This is largely a compilation of the records in the literature, but contains some redescriptions and numerous original drawings and photographs. 161 spp. are described (none new) and others briefly mentioned. There are 55 Tineoidea, 18 Pyraloidea, 40 Psychoidea (Limacodidae called Heterogeneidae), 9 Bombycoidea, 14 Hesperioidea, 24 Papilionoidea. Conspicuously absent are Geometridae, Phalaenidae, and Lycaenidae.

63. Matthews, J.K., "Lepidoptera of the Coastal Sandhills of Lancashire." Proc.& Trans. S. London Ent. & N.H.Soc., 1945-46: pp.72-78. 23 Nov. 1946.

64. McElvare, Rowland R., "Notes on Heliothiinae." Bull. Brooklyn Ent. Soc., vol. 42: p. 96. "June" (Dec.) 1947. Resurrects Heliosea fasciata Hy.Edw. from synonymy and places it in genus Heliothodes. Agrees with Benjamin, placing Melicleptria sabulosa as synonym of Heliosea pictipennis. Brief notes on H. pictipennis.

65. Meyer, A., "Untersuchungen über die Bekämpfung des grauen Lärchenwicklers. (Semasia diniana Gn.) in den Wäldern des Ober-Engadins." (In German). Mitt. Schweiz. Ent. Gesell. (Switzerland), vol. 20: pp. 452-474, 5 figs. 8 Aug. 1947. Principally deals with factors of pest control, but includes biological notes and photographs of the species, a tortricid moth.

66. Michener, Charles D., "A Four-legged Butterfly". Natural History (N.Y.), vol.57: p.27, 2 photos. Jan. 1948. Authoritative popular account of nymphalid butterfly legs, with good photos.

67. Murray, H., "Some Rare Lepidoptera from Southern Ireland." Irish Naturalists' Journal (Belfast), vol.9: pp.77-78. July 1948. Annotated list of 42 spp. of rare Macrolepidoptera.

68. Nunberg, Marian, "First contribution to the knowledge of the native insects, mining the leaves." (In Polish). Fragmenta Faunistica Musei Zoologici Polonici (Warsaw), tom.5, nr.6: 27 pp. 21 Aug. 1947. Annotated list including 4 Eriocraniidae, 39 Nepticulidae, 1 Incurvariidae, 2 Leucopteridae, 1 Lyonetidae, 5 Tischeriidae, 4 Bucculatrigidae, 1 Phyllocnistidae, 33 Gracilariidae, 5 Coleophoridae, 1 Heliozelidae, 1 Momphidae, 2 Gelechiidae. Includes a list of host plants with all miners found. 19 references listed.

69. O'Farrell, A.F., "Lepidoptera in Northern Ireland, 1943-45." Irish Naturalists' Journal (Belfast), vol.9: pp.76-77. July 1947. Merely a list of species taken.

70. Oiticica Filho, Jose, "Revisão dos Nomes Genéricos da Familia Sphingidae (Lepidoptera). Parte 1. Subfamilia Sphinginae Butler, 1877." (In Portuguese). Bol.Museu Nacional (Rio de Janeiro), no.66:57 pp. 15 June 1946. Gives a list of all the generic names of the World Sphinginae, with the genotype of each, and a very extensive bibliography. Important for all workers in the Sphingidae.

71. Parfitt, R.W., "Eulia formosana Geyer (Lep. Tortricidae): a Species New to the British List." The Entomologist, vol.80: pp.225-227, pl.IV, figs.2-4. Oct. 1947.

72. Pendlebury, H.M., "Lepidoptera (Heterocera)" and "Lepidoptera (Rhopalocera)" in "Contributions to the Natural History of Christmas Island, in the Indian Ocean." Bull. Raffles Museum (Singapore), no.18: pp.58-80. Oct. 1947. Pp.58-73 contain an annotated list of 76 spp. of moths. Pp.74-80 deal with the 14 spp. of butterflies considered as residents of the island. About 100 other spp. of moths have not yet been positively identified. 6 Sphingidae, 46 Noctuidae, 15 Geometridae are included.

73. Petersen, B., "On the difference in species between Boloria pales Schiff. and Boloria arsilache Esp." Uppsala U. Zool. Bidr. (Sweden), vol.25: pp.335-343. 1947. Not seen by us.

74. Ramos, J.A., "The Insects of Mona Island (West Indies)". Journ. Agr. Univ. Puerto Rico, vol.30: pp.1-74, 2 pls. 17 July 1946. The island is mid-way between Puerto Rico and Hispaniola. Lists 526 spp. of insects, incl. 87 Lepidoptera in 20 families. Most moths det. by W.T.M. Forbes, most butterflies by W.P. Comstock. Forbes describes as new: Ptychopoda monata (Geometridae).

75. Rawlins, J.W., "Notes on Some Butterflies from Penang and Province Wellesley,Malaya." Journ.Bombay Nat.Hist.Soc., vol.46: pp.687-691. Apr.1947. Annotated list of 87 spp.

76. Romieux, Jean, "Migrations de Lépidoptères observées dans la région de Genève en 1946." (In French). Mitt. Schweiz. Ent. Gesell. (Switzerland), vol.20: pp.551-564. 8 Oct. 1947. Discusses the 1945 migrations of Celerio lineata livornica, Colias edusa, Pyrameis cardui, Laphygma exigua, Heliothis peltigera, Plusia gamma, Pionea ferrugalis.
77. Romieux, Jean, "Opisthodontia rotundata Berio et Stenophatna denticulata Rmx." (In French). Mitt. Schweiz. Ent. Ges., vol.20: p.606. 8 Oct. 1947. Synonymizes latter under former, but transfers rotundata to genus Stenophatna.
78. Scholten, L.H., "Het Atalanta-bos. Herinnering aan de Bevrijdingszomer 1945." (In Dutch). Tijdschrift v. Ent. (Netherlands), vol.88: pp.489-492 (1945). 1 Oct. 1947. On Pyrameis (= Vanessa) atalanta.
79. Sevastopulo, D.G., "Tukdah Diary, September and November 1945." Ent. Rec. & Journ. Variation, vol.59: pp.121-122. Oct. 1947. Continuation of notes from India.
80. Thomann, H., "Exapate duratella Heyd. (Lep. Tortr.) ein spätfliegender Wickler der Graubündner und Walliser Alpen." (In German). Mitt. Schweiz. Ent. Gesell.(Switzerland), vol.20: pp.475-483, 5 figs. 8 Aug. 1947.
81. Townsend,A.L.H., "An Introduction to Moth Collecting." Nature in East Africa, no.3: pp.19-21. Sept. 1947.
82. Toxopeus, L.J., "Nephele didyma F. in Java (Lep. Sphing.)." Tijdschrift v. Ent. (Netherlands), vol.88: pp.345-346 (1945). 1 Oct. 1947. First clear record for Java, from reared specimen. Details of habits and larval and pupal characters given. Host - Carissa Carandas. A really informative paper.
83. Turner, A.H., "Immigrant Lepidoptera at Bickenhall, Somerset, and the Occurrence of Catocala nupta Linn. in Derbyshire." Ent. Rec. & Journ. Variation, vol.59: p.114. Oct. 1947.
84. Van der Meulen, G.S.A., "Over het kweeken der rups van Araschnia levana L." (In Dutch) Tijdschrift v. Ent. (Netherlands), vol.88: pp.327-328 (1945). 1 Oct. 1947.
85. Van Wisselingh, T.H., "Araschnia levana L." (In Dutch). Tijdschrift v. Ent. (Netherlands), vol.88: pp.323-326 (1945). 1 Oct. 1947.
86. Vari, L., "Biologische Aanteekeningen over Fomoria weaveri Stt. (Stigmellidae)." (In Dutch). Tijdschrift v. Ent. (Netherlands), vol.88: pp.521-523, 8 figs. (1945). 1 Oct. 1947. Figures larval mines and adults clearly. Says Stigmellidae = Nepticulidae. Describes new aberration.
87. Varin, G., "Nombreuses captures d'Heodes Dispar race Rutilus dans la Côte-d'Or."(In French). L'Entomologiste (Paris), vol.3: pp.122-123. May 1947. Gives records of rutilus and a few other butterflies in France.
88. Verhey, C.J., "Twee zeldzame Nederlandsche Macrolepidoptera." (In Dutch). Tijdschrift v. Ent. (Netherlands),vol.88: p.276 (1945). 1 Oct. 1947.
89. Viette, P., "Contribution à la faune lépidoptèrologique de la Sologne." (In French) L'Entomologiste (Paris), vol.3: pp.117-122. May 1947. Lists, with dates, 181 spp. of moths (& 1 skipper) taken at Sologne (in north-central France).
90. Wilcke, J., "Nieuwe gegevens over de Biologie van Lycaena alcon F." (In Dutch). Tijdschrift v. Ent (Netherlands), vol.88: pp.537-542, 6 figs. (1945). 1 Oct. 1947. Describes in detail life history of this ant-tended lycaenid butterfly with figures. We wish we could read Dutch for this paper.
91. Williams, Carroll M., "Physiology of Insect Diapause. II. Interaction between the brain and prothoracic glands in the metamorphosis of the giant silkworm, Platysamia cecropia." Biol. Bulletin, vol.93: pp. 89-98, 13 figs. Oct.1947. Prof. Williams' remarkable discoveries on the hormones of saturniids are further reported here. He finds that adult development of the pupa requires chilling and then warming to break the diapause, and that the brain after chilling activates the "prothoracic gland", which then produces the hormone affecting the body tissues and causing full maturation. The action of the brain is not thru nerves, but "by an indirect mechanism."
92. Wiltshire, E.P., "Middle East Lepidoptera, VIII: Some More New Species and Forms from Iran." Ent. Rec. & Journ. Variation, vol. 59: pp.109-111,125-127, pl.V, figs.A,B. Oct.,Nov. 1947. Describes as new: Hadena nana f. monotona, Harmodia gladys, Archanara sparganii ssp. algaeoides, Ennomos ? effractaria subsp. fraxineti and its ab. effuscaria and subsp. zandi, Ethmia chosroes, E. cambyses, E. bipunctella subsp. griseicostella,all from Iran. Photos of all but the aberration. Figs. of ♂ valves of H.gladys and H. hyrcana. Plate also shows larvae of 4 spp.of moths,but no text appears.
93. Wojtusiak, R.J. & W. Niesiolowski, "Lepidoptera of the Central Caucasus, Collected during the Polish Alpine Expedition in 1935, with ecological and zoogeographical Remarks. I. Part. Macrolepidoptera." (In English). Polska Akad. Umiej. Prace Muz. Przyrod. (Cracow), nr.6: 74 pp., pls.11-13. 25 Aug. 1946 (1947). Annotated list of 73 butterflies, 102 moths. Described as new are: Pieris napi ssp. balcarica, Melitaea aurelia ssp. albimacula, Lycaena coridon f. sokolowskii, Coscinia striata ssp. wisniewskii, Haemorrhagia titius f. karaugomica, Chaemaepora euphorbiae ssp. garbowskii, Coenonympha tiphon chatiparae ab. albocincta, Crymodes zeta f. caucasia. Latter two do not seem to deserve names. Dr. Wehrli's description as new of Gnophos certiatus ssp. bezengicus given. Photographs of all novelties except the pierids, and of 4 habitats. Analyzes collection and presents generalities on origin and age of macrolepidoptera fauna of Caucasus.
94. Woytkowski, Felix, "Las Catastictas del Perú (Lepidoptera-Pieridae)." (In Spanish). Bol.Mus.Hist.Nat. "Javier Prado" (Lima, Peru), vol.10: pp.91-98. "1946". Reports on a collection from 5 Peruvian localities of Catasticta of 29 spp. and 2 races, with relative numbers of the species found. A total of 1394 specimens. Determinations apparently by F.M. Brown. No taxonomy in the paper.

EARLY SPRING COLLECTING IN KENTUCKY.- On the first warm days of spring there is a certain place where I like to go collecting for butterflies. It is an old, unused, overgrown road that winds its way through a deep oak woods. There I have spent some of the most enjoyable hours of my life, wandering along with net in hand, pausing here to swing the net at a passing Euchloe olympia or Anthocharis midea, there to swish at a flitting Euptychia gemma. Or perhaps, try to stalk Anaea andria, only to see a flash of its brilliant orange wings an instant before I get near enough to swing, and watch it alight again on the ground amongst the dry, brown leaves safely out of my reach.

The old road winds on out across pastures dotted here and there with isolated clumps of red cedar, each with its own pair of Mitoura damon, and finally through an old peach orchard whose blossoms rarely fail to yield the scintillating Strymon m-album and other choice things. Perhaps a specimen of the rare little elfin Incisalia henrici will be taken when it alights on a dead twig or spot of damp ground.

Finally I come to a saucer-shaped depression of something more than an acre in area, and covered, over most of that area, with a dense growth of grass-like plants; here and there are mud-bottomed pockets of open water with a scanty growth of cat-tail about their margins. The road through here is nearly bare of vegetation and is always damp, in some spots almost saturated with water. It was here, at one of these wet spots in the road, that I first chanced on the elusive Erora laeta one April afternoon in 1941. It evaded capture, and I saw no more of laeta that year, nor did I see it the next year. The war interrupted my collecting, and I had no other opportunity to search for laeta until 1946 and that year's search ended fruitlessly too. April 1947 had been unusually cold and although I had continued my search, I did not expect to find laeta this year either. Even the usually common species were scarce or entirely absent. And so it was with little hope of ever seeing that rare species again, that I started out for a few hours' collecting on May 6th, 1947. But there at a wet spot in the road near the place that I had seen my first laeta, was an unusual hairstreak. I looked closer,- it was Erora laeta! A lucky stroke with the net brought it in. At last, I had become one of the select few who had collected the living laeta!

-Carl Cook, Crailhope, Kentucky.

J.A. Keji, of Ithaca,N.Y., notes that in a brood of about 80 cocoons of Telea polyphemus, which he reared from one female, one large cocoon did not produce the adult, a dark male, for two years. (See NEWS, vol. I, p.41, #31).

Richard Guppy writes that the 1947 season on Vancouver Island was the reverse of that in nearby Washington, at least as regards Papilios. He states: "Hereabouts the most noteworthy feature of the past season was the unusual abundance of this same genus."

PHYCIODES BEHAVIOR IN MISSOURI.- "Phyciodes gorgone (Hbn.) appeared plentifully here this year(1947), in late June and early July. Previously,I have seen this species only singly in occasional years. The butterflies fed mostly on the flowers of Erigeron ramosus, E. annuus, and Asclepias tuberosa. On the last of these, I watched courtship activity for some time on the afternoon of June 28: a male would flutter over a feeding female,who would respond with vibrating wings and upturned abdomen. No copulation took place,however, apparently because of disturbances by other males; one of them would chase the attentive one away and immediately take his place above the female. This occurred again and again; but most noteworthy was the behavior of a much-worn male of Phyciodes nycteis (Dbl. & Hew.),fluttering above a female gorgone which responded as to a male of her own species. Males of gorgone chased him off repeatedly, and he treated them likewise. I watched this inter-species wooing for more than half an hour, until a thunderstorm ended the performance. In contrast to the actions of this nycteis, a male of P. tharos (Dru.) feeding at the same cluster of flowers appeared oblivious of the gorgone female and was unnoticed by the males."- Harold I. O'Byrne,Glencoe,Mo.

ALBINISTIC LIMENITIS IN ILLINOIS.- Alex K. Wyatt, of Chicago, reports that Frank Rutkowski caught an unusual Limenitis archippus at Peru, Illinois, Oct. 11, 1947. "This specimen is a female of good size,but instead of the customary brown color,it is almost white, showing only a pale yellow shading in costal area of secondaries. The black cross band of primaries is narrowed, although the enclosed white spots are normal. The cross band of secondaries is also narrow, being practically missing between veins 2 and 3. The under side is even paler, but the cross lines or bands are heavier than above."

Mr. Wyatt also mentioned finding in his yard a Nymphalis milberti in late September and several males of Hylephila phylaeus regularly for fully a month, even after the first light frost. Both species are generally uncommon in the Chicago area.

NOTES ON PHOEBIS IN FLORIDA.- "Philea will oviposit on Cassia corymbosia (foliage & bloom) and on the yellow bloom of Cassia fistula. Also on the corymbosia P. eubule and E. nicippe larvae may be taken while Erebus odora feeds on the leaves of fistula. The larvae of philea will feed on flowers in preference to the foliage and take on the color of their food, yellow on flowers and green on foliage. Likewise the chrysalids differ in color but these differences are not carried on to the adult. However by feeding the larvae at a low temperature the adults will be much darker than normal. I have only taken the albino form during hot weather. Philea is relatively free of parasites. The adult philea will travel long distances. It is interesting to see a large female flying high and fast suddenly drop to the ground as though being pulled by a suction; investigation will usually produce the food plant." - W.H. Schoenherr.

(See notes by Berry in Vol. I, p.70).

NOTICES BY MEMBERS

BRAZIL MACROLEPIDOPTERA offered in exchange for North American Papilios and Saturniidae. Will gladly collect Noctuidae and Geometridae for exchange. H. R. Pearson, Postal Box 2206, Rio de Janeiro, D.F., Brazil.

Can offer Callosamia angulifera, Citheronia regalis, etc. for uncommon Sphingidae and Catocala needed for my collection. A very large set of duplicates of commoner Lepidoptera available in exchange for commoner species from elsewhere. C.W. Baker, P. O. Box 455, Waynesburg, Ohio.

Mr. Heinz Jensen, 54 Hyltebjerg Alle, Vanlose, Copenhagen, DENMARK, wishes correspondence with U.S.A. Lepidopterists, especially in the Southeast. He is willing to collect any Scandanavian Lepidoptera and is interested in exchanging books and journals on Lepidoptera.

BUTTERFLIES & MOTHS OF THE HIGH ALPS - All Lepidoptera of the Austrian Tyrol offered. Special rarities are species such as Colias palaeno, Argynnis thore, Erebia glacialis and epiphron, Orodemnias quenselii, Plusia spp. Prices according to Staudinger & Bang-Haas List. Send list now of species desired. Some material on hand. Extensive collecting planned for the coming season.
Dr. H. Wilcke, Kössen/Tyrol, Nr. 199, AUSTRIA

RHOPALOCERA AND ZYGAENIDAE OF SOUTHERN FRANCE offered in exchange for North American Rhopalocera, Zygaenidae (including Procris = Ino), etc. Write in English. F. Dujardin, 25 rue Guiglia, Nice (A.M.), FRANCE.

Will purchase MORPHO MENELAUS, RHETENOR, SULKOWSKYI by the hundred lot or whatever quantity available. The Butterfly Store, 77 Madison Ave., New York 10, N.Y.

WISH TO PURCHASE Canadian (esp. Arctic) Boloria & Colias. Dr. A.B. Klots, College of City of New York, New York 10, N.Y.

Large quantities of Philotes sonorensis, Anthocaris sara, Speyeria macaria, Tharsalea arota for exchange for N.Am. Rhopalocera, esp. Theclinae and Hesperiidae. Will exchange Speyeria nitocris for S. diana. D.E. Parker, 1033 S. Beacon Ave., Los Angeles 15, Calif.

EAST AFRICAN BUTTERFLIES, for sale or exchange. Want American species, particularly South Am. R.W. Barney, Govt. African School, Kakamega, Kenya, East Africa.

NAMED INDIAN BUTTERFLIES and unnamed moths from districts of Poona, and Dehra-Dun for sale. E. Hug: airmail c/o Mrs. J.Graf, Zeughausstr. 8, Chur, Switzerland, or regular mail: Vaudrevange-Saar, Wilhelmstrasse 3, Terr. Saare, Via Saarlouis, France.

FOR SALE: Insect collection boxes, 9 x 13 x 2 1/2 inches, dovetailed corners, the finest composition pinning bottoms, sanded but not finished, beautiful redwood throughout, hinged, with latches -$2.10 apiece, $24 dozen, F.O.B. Beverly Hills. Bio-Metal Associates, P.O. Box 346, Beverly Hills, Calif.

Papered MANITOBA RHOPALOCERA for exchange for tropical Lepidoptera. About 40 species, all with complete data. List available on request. C.S. Quelch, Transcona, Manitoba.

GUADALCANAL Lepidoptera (esp. Rhopalocera), of almost every native genus, offered in exchange for needed N. American species. T.W. Davies, 9734 Castlewood St., Oakland, Calif.

Wanted: Philotes of N. America for a systematic study, for purchase, examination, or exchange. Rudy Mattoni, Dept. of Entomology, Univ. of Calif., Los Angeles 24, Calif.

Will exchange WASHINGTON LEPID. & Coleoptera for N. American Rhopalocera, esp. Euphydryas & Mitoura. Eu. taylori available in large series. Many fine specimens from Olympic Mts. and Puget Sound Basin. D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

Wanted for determination, exchange, or purchase: ARCTIIDAE of the Neotropical Region (especially Central America & West Indies), as well as North American ADELOCEPHALIDAE (Sissphingidae).

Correspondence invited.

Prof. Lauro Travassos, Laboratorio de Helmintologia, Instituto Oswaldo Cruz, Caixa Postal 926, Rio de Janeiro, D.F., BRAZIL.

FOR SALE - THE BERRY COLLECTION
The results of 18 years in Florida of collecting and exchanging. Many very rare species. 2000-4000 mounted specimens; 6000-8000 specimens in papers. Over 1100 different named forms. Especially rich in Hesperiidae, Lycaenidae, Sphingidae, Catocala. For details write:
Dean F. Berry, Box 146, Orlando, Florida.

LIVING MATERIAL AVAILABLE

Offer a new copy of Ford's "Butterflies" in exchange for several living cocoons of Platysamia cecropia. John B. Smartt, 36 Botanic Road, Glasnevin, Dublin, Ireland.

PUPAE OF PAPILIO ZELICAON and P. PHILENOR HIRSUTA from California, full data, offered in exchange for papered butterflies needed for our collections.
Thomas W. Davies, 9734 Castlewood St.
William A. Hammer, 5300 Walnut St.
Oakland, California

Citheronia regalis & Euparthenos nubilis pupae Catocala cara, concumbens, & amatrix eggs. Available alive. Herman Wilhelm, Buckingham Road, R.D. 1, Willimantic, Connecticut.

DESIRE LIVING PUPAE OF LYCAENIDAE (esp. Theclinae). Offer in exchange papered Calif. spp. Graham Heid, 11745 Hesby St., N.Hollywood, Cal.

What have you to offer in exchange for LIVING PUPAE of Telea polyphemus? R.J. Ford, 3266 Ardmore Ave., South Gate, Calif.

Cocoons of Platysamia euryalis, gloveri, columbia, and Callosamia angulifera & calleta desired. Correspondence invited. R.L. Halbert, 444 N.Normandie Ave., Los Angeles 4, Calif.

QUESTION AND ANSWER COLUMN

Q. "How dependable are the male genitalia for Lepidoptera (especially butterfly) taxonomy?"

A. They are probably as dependable as any group of characters, and more so than most; but occasionally fail,probably in cases where species are of very recent origin, and where differentiation is largely physiological. The most notorious case is Argynnis (Speyeria), where the Old-world species have excellent genitalic characters, while only a few of the American ones (e.g. diana, idalia) show even slight differences. Phyciodes is almost as bad in N. America, but in most genera species differences are clean-cut or even striking.

For grouping-characters above species they are probably no less and no more valuable than characters of other parts.

Q. "Can the female genitalia provide useful genus and species characters in butterflies as they do in many moth groups?"

A. They are almost as useful at the species level as the male characters, but differences are often less striking, and much more difficult to describe and figure. For higher groups they serve at times but are highly treacherous. For instance,a set of four scobinate bands in the bursa is characteristic of Trifid Noctuidae of each of the main subfamilies, but in each of them the bands are modified or lost in many and widely scattered genera or even species, which will be wholly normal in external and ♂ characters. Another instance is Maniola jurtina, discussed in Pierce's"Genitalia of the British Rhopalocera."

Q. "What characters can be used in classifying larvae of the Hesperiidae?"

A. Most characters used in other larvae:shape of head (Scudder),setae on mouth-parts, relative thickness of neck (prothorax), development and number of hooks on prolegs, development of the plate-like primary setae; texture of skin; general form of body in life, etc. See especially Scudder's "Butterflies of Eastern North America"; a few further characters are given in "A Structural Study of Some Caterpillars" Ann. Ent. Soc. Am. iii, 105.

- W.T.M. Forbes

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Mervyn Plomley reports several Lycaena helloides from N.W. Georgian Bay, Paris, and Hamilton, Ontario, all taken in June. This appears to be the easternmost record in Canada. The identifications were checked by Dr. T.N. Freeman.

* * *

Since there is such a demand for back nos. of the NEWS, any 1947 members who do not wish to keep their copies of Vol.I are urged to return these to the Editors, who will refund postage,or to pass them on to a new member. Of course, all proceeds from the sale of back numbers are added to Society funds.

NEW MEMBERS

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Plomley, Mervyn, 28 Burris St., Hamilton, Ontario, CANADA.
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Wilcke,Dr.Hermann,Kössen/Tyrol,Nr.199,AUSTRIA.
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CHANGES OF ADDRESS: Adelphe, Brother, 162 Montreal Rd., Eastview, Ontario, CANADA.
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O'Byrne, Harold I., Iberia, Missouri.

AVAILABLE COPIES OF VOLUME I OF THE NEWS

All remaining copies of the first volume (1947) of the NEWS, including the 8 monthly issues and detailed Membership List,have been inventoried and the numbers in stock listed below. These copies are available to Society members at $0.20 each. No complete volumes are left. In 4 issues, all remaining copies are imperfect due to the mimeographing process, but still completely usable. These imperfect issues are $0.15 each. Prices include postage.

No.1(May) - All imperfect
No.2(June) - All imperfect
No.3(July) - Limited
No.4(Aug.) - Out of stock;some separate pp.
No.5(Sept.) - All imperfect
No.6(Oct.)
No.7(Nov.) - All imperfect
No.8(Dec.) - (with Field Season Summary)
Membership List,including addresses and special interests, complete to end of 1947.

THE LEPIDOPTERISTS' NEWS is the monthly newsletter of The Lepidopterists' Society. Membership is open to anyone interested in the study of butterflies & moths. The 1948 dues, including subscription to the NEWS, are $1.50 for Regular Members and $3.00 or more for Sustaining Members. Please make remittances payable to : Charles L. Remington.
Address all Society correspondence to:
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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P.O. Box 104, Cambridge 38, Massachusetts, U.S.A.

Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

Volume II | March 1948 | Number 3

PREPARATIONS FOR THE 1948 NORTH AMERICAN SEASON SUMMARY

As the fall collecting approaches for Southern Hemisphere members, North America is slowly emerging from one of the severest winters on record. In the East the snowfalls have been the heaviest ever known and the cold waves have reached deep into the southern states. The Southwest has continued one of the most terrible droughts it has known, but recent rain relieved it somewhat. Thus the main Lepidoptera collecting season for 1948 is rapidly approaching and has in fact begun in Florida and the Southwest. The effects of this winter on Lepidoptera will be particularly interesting. This seems a propitious time to discuss the Society's Summary of the 1948 Season in North America which will be published at the end of the year as a NEWS supplement. In order to make this and future Season Summaries wholly successful it will be necessary for several members in each of the eight areas to keep careful records of their local Lepidoptera throughout the season. Many members have already kept a record book for enough years to generalize accurately on comparative conditions as each new season proceeds. We hope many others will begin such regular records this year.

Again this year, the points we hope to have answered are: 1) Was the flight period of the various species earlier or later than the average? 2) If either early or late, did it return to normal or otherwise change as the season progressed? 3) Did unusual climatic events [cold, drought, excessive rain, hurricanes, etc.] occur, and if so, what was their effect on Lepidoptera? 4) Did biological or human agencies [parasitism, fires, birds, etc.] affect Lepidoptera this year in an unusual way? 5) Did any individual species show very unusual changes - rare species suddenly common or vice versa? 6) Occurrence of migrants and "strays".

The last can yield important information immediately, whereas the significance of much of the first five will result primarily from the accumulation of information during several years. Many North American Lepidoptera are well-known as migrants - e.g. Eurema mexicana, Phoebis sennae, Danaus plexippus, Dione vanillae, Vanessa cardui, Herse cingulata, Celerio lineata, Erinnyis ello, Erebus odora, Thysania zenobia, and Alabama argillacea, to mention a few of the best known species. Some have occasional or regular mass migrations - plexippus, cardui, lineata, argillacea. Others seem to appear individually and infrequently - odora, zenobia, mexicana, ello. Exact date records are needed from a large number of different observers in order to gather material for understanding the movements. D. plexippus is reputed to have a northward migration in spring. Several veteran collectors have never seen a spring migrant. Information on this important point is urgently needed.

It is hoped that 1948 will show reports from many regions weakly represented in 1947. The region from Maryland to Florida, westward to New Mexico and Nebraska was unsatisfactorily reported. The same was true of Oregon, Idaho, Montana, Wyoming, the Dakotas, Minnesota, and most of Canada west of Quebec. Alaska, Labrador, and Newfoundland were unrepresented. It is hoped that the West Indies and Mexico eventually will become included regularly. In general, the butterflies were thoroughly treated. Very little information on moths was reported, and the "micros" were nearly ignored, M.O. Glenn rescuing them from complete oblivion.

This is the call for heavy participation and thoroughness of records. Your regular observations and prompt noting of them can give a genuine boost to our knowledge of seasonal changes in the Lepidoptera of the continent.

C.L.R.

Mr. P. Siviter Smith, Siviter House, Ludgate Hall, Birmingham 3, England, is revising the genus Lycaena (= Chrysophanus). He is anxious to settle the long-standing question as to whether L. phlaeas of Europe and L. hypophlaeas of No. America are one species. The test is whether the two will mate and produce fertile offspring. Mr. Smith will send living eggs of phlaeas by airmail to N. Am. Lepidopterists willing to rear them and attempt the cross-mating with hypophlaeas. Since hypophlaeas is abundant throughout eastern No. America and the host plant, Sheep Sorrel (Rumex acetosella), grows as a weed in city lawns as well as in fallow fields, the problem should not be difficult. A significant contribution to science can be made by one or preferably several members wishing to undertake the test. Members who wish to participate should write directly to Mr. Smith. We will be pleased to have a card from any members who undertake the experiment. It is hoped that through cooperation of European and American members similar breeding tests will be made with Papilio machaon and P. aliaska and zelicaon, Colias chrysotheme and C. eurytheme and philodice, Lycaenopsis argiolus and L. pseudargiolus, and other Lepidoptera.

PRINCIPLES OF TAXONOMY - I.

In response to requests from several members a series of brief discussions on elements of taxonomy will be presented, with special stress on definitions of terms used commonly in Lepidoptera taxonomy. A few introductory definitions are necessary in launching these remarks. BIOLOGICAL NOMENCLATURE is the regulated system of naming species of plants and animals and of naming the categories into which they are grouped. CLASSIFICATION is the grouping of these species into higher categories. The scientist who names and defines the species and then classifies them is known as a TAXONOMIST or SYSTEMATIST. The distinction between the last two terms is now indefinite, but in general the taxonomist is concerned with species and the systematist with their grouping into a natural classification.

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At the end of the Dark Ages when the quest for knowledge began to escape from the suppression of theology it was natural that men interested in living things sought to give standardized names to the organisms they saw around them. Aristotle had classified the animals, but the flaws in his system were increasingly apparent. Previous to the time of Linnaeus the systems were clumsy and none was found acceptable universally. A species might, for example , be named The Orange Butterfly Of The Alpine Meadows, although of course it would have been written in Latin, virtually the only scholarly language prior to 1800.

Carl von Linné (Carolus Linnaeus) was a brilliant Swede interested in plants and animals. He had a remarkable mind for arranging and classifying, and he published several revisions of his Systema Naturae and Species Plantarum, each one modified from its predecessor. Finally he settled on the BINOMINAL system for naming species of animals in the tenth edition of Systema Naturae and its date of publication, 1758, is the starting point of our modern system known as binominal nomenclature. It is surprising that such a method was not adopted much sooner, since it is so similar to the occidental system of human names.

In this manner every species has 2 names, one its generic name, which it has in common with other closely related species, and the other its specific name which it alone has within its genus. Thus the Alpine orange butterfly became Colias palaeno, belonging to the genus of yellow or orange black-bordered butterflies, Colias, and being a special member, palaeno, of that genus. The plural of "species" is "species". The plural of "genus" is "genera". The adjectives are "specific" and "generic". The spellings "specie" and "genuses" are never correct in biology. A generic name must always be spelled with an initial capital letter. The specific name of any animal is nearly universally written with a small (lower case) initial letter, although the International Rules permit capitalization of names derived from names of persons. Virtually all taxonomists, except many French workers, have abandoned the clumsy practice of capitalizing specific names.

TYPE NOMENCLATURE

There are so many different names applied to types of species that members may find helpful a list of the 13 most common and useful names, with a brief definition of each. Type species of genera will be considered later. A much more detailed list prepared by Professor C.P. Alexander will be found in Annals Ent. Soc. Am. 32: 689-702, 1939. Many of the following definitions were obtained there.

1. Primary Type: A specimen on which the description of a new species is based. Includes Type, Holotype, Allotype, Lectotype, Cotype, Syntype, Paratype. Possibly a better use of this term is for the one specimen of each sex which stands as the type. Thus Neotype would become primary and Paratype secondary.
2. Secondary Type: A specimen considered to deserve a type name but not included in the original series on which the description of a new species is based. Includes Plesiotype, Metatype, Topotype, etc.
3. Type: Strictly construed, this term equals the preferable Holotype (see below).
4. Holotype: The one specimen, selected by the original author at the time of describing a new species, standing as the type of the species. May be of either sex.
5. Allotype: The type of the opposite sex from the holotype. If the original type series contained only one sex, the allotype could be described by the same or another author when the opposite sex was found, subsequent to the original description. Many careful workers prefer to use the term only for a specimen used in the original description or for a topotype.
6. Cotype: Any specimen of the author's original series when no holotype was designated. Syntype is a synonym of Cotype.
7. Paratype: Any specimen of the original series after the holotype and allotype have been selected.
8. Lectotype: The holotype selected by the original or a later author from the series of cotypes (syntypes) when no holotype was originally selected. This is the "type by subsequent designation".
9. Neotype: A specimen designated to replace a destroyed or lost holotype or lectotype. Should be selected from paratypes if possible; otherwise should be a topotype.
10. Metatype: A specimen from the original locality (topotype) identified by the author of the species, after the original description. A metatype is really as valuable as a paratype, but is not usually so regarded.
11. Topotype: Any specimen from the original locality (type locality). The type locality is the locality where the holotype was taken and is to be narrowly construed as the exact locality.
12. Plesiotype: A specimen used for any redescription, supplementary description, or figure published by any author after the original description of the species.
13. Homoeotype: A specimen identified by another than the original author on comparison with the type. A homoeotype identified by an excellent taxonomist is almost as valuable as a metatype.

C.L.R.

THE CARE OF A COLLECTION AND LIBRARY

by Cyril F. dos Passos
Mendham, New Jersey

The capture, preparation, and determination of specimens of Lepidoptera are the primary steps in the formation of a collection. The proper maintenance of the insects is as important as the other steps. Unless it is attended to carefully, the preceding work is wasted.

The greatest dangers to a collection are from light, the larvae of Dermestes beetles, and mold. The first results in fading but is the easiest peril against which to guard. All that is necessary is to keep the insects in closed boxes or cabinets, except when under examination. Dermestes is an enemy against which one constantly must be on the watch. All acquisitions, no matter from what source received, should be fumigated immediately upon their receipt and before they are placed in the collection. This is done easily by placing them in an airtight container, such as a tin box, in which there is a liberal amount of paradichlorobenzene, and leaving them there for several days. But the collection itself must be guarded against this persistent pest. For a number of years the author has done that by means of creosote fumes. It is not claimed that the fumes of creosote will kill Dermestes, but the odor repels them and they seldom, if ever, enter boxes that have been treated in this manner.

The creosote is placed in a gelatine capsule filled with cotton and pinned into each insect box. These gelatine capsules may be purchased at any drugstore. For use in the collection remove the cap and place it over the long end. This reinforces the bottom of the capsule. Roll a small amount of cotton into the shape of a cylinder and insert it in the capsule. This must not be packed tightly, because room must be left for the creosote. Hold the capsule at each end with the thumb and index finger. Then insert a no.0 insect pin diagonally, entering at a point just above the rim of the cap as reversed, and coming out just below so as to pass through a single layer of gelatine on entering and through a double layer on emerging, thus locking the cap to the long end of the capsule. Pin the holder so made into the box. With a medicine dropper fill the capsule with creosote. The opening of the capsule should point toward the upper part of the box when the latter is placed in its permanent position. Originally the author replenished the creosote once a year, but for reasons presently stated once every two years is now deemed sufficient. In several years the bottom of the capsule will partially dissolve or rot through. When that occurs the capsule should be replaced or nested into the next larger size of capsule.

Since the end of World War II an insecticide known as "DDT" has become available for civilian use in the U.S.A. The author has experimented with this and found it most effective. DDT is used as a residual insecticide, killing when the insect touches it, rather than by fumigation as a gas or in an aerosol. A thin coating should be sprayed in solution form on any surfaces which wandering ♀ Dermestes might touch. Indoors, a coating is effective for nearly a year if not wiped off in dusting, etc. Also it has eliminated all clothes moths, silverfish, and flies. Since its use it has been found necessary to replenish the creosote only every two years. This year not a single Dermestes was found in the writer's collection of butterflies contained in some seven hundred and fifty boxes.

During World War II the author was unable, because of the fuel oil shortage, to heat his entomological laboratory. As a result a thick, white, fuzzy mold formed on some of the insects in boxes placed against the north wall. This has presented a problem to which no entirely satisfactory solution yet has been found. However, the following steps have been taken to overcome this difficulty. Their description may prove useful to other collectors. All insect boxes standing on shelves against the north wall have been moved away from the wall by about three inches, thus creating an air space between the wall and the boxes. The wall has been sprayed with "Mil-Du-Rid", a preparation manufactured by the Interchemical Corporation of Fair Lawn, New Jersey. Finally, some heat from a nearby radiator has been directed into this open air space. It is believed that these steps will prevent the formation of additional mold. Mold can never develop in dryness. Specimens which are already moldy are apparently beyond repair. No method tried thus far has succeeded, but perhaps the author will have something further to report another year.

The only enemy to a collector's library appears to be silver-fish. Fortunately old and valuable books are not attacked by silver-fish, because the food habits of these insects do not attract them to fine rag paper. They prefer to eat the cheapest paper made from wood pulp and articles such as window shades where attached to the roller or end by starch. The control of silver-fish with DDT is easy. If the reader has any fine leather bindings, they should be treated twice a year with some such product as "Lexol", manufactured by the Martin Dennis Co., Newark, New Jersey. Unfortunately, the heat in modern homes dooms such bindings anyway, but their life may be prolonged by the foregoing treatment.

Too great care cannot be given to collections. After all the time and trouble devoted to their creation, it is a pity to have them ruined. Somehow or other it always is the rarest and most valuable material that suffers first and most severely. The author even has seen types in museums reduced to nothing but a pin and label! Such happenings are inexcusable. They could have been prevented by slight care.

Editor's note: John Abbot, of Georgia, was the earliest important contributor in America to the knowledge of Lepidoptera, although he never published his fine drawings and notes directly, these appearing under the authorship of Smith and Boisduval & Leconte. Any authoritative biographical material is valuable. His life has been an intriguing mystery to American Lepidopterists for nearly a century, and much speculation has appeared in print. I was startled and delighted to discover in the locked files of the Museum of Comparative Zoology (Harvard University) a detailed account of the first part of his life handwritten by Abbot, himself. It is a pleasure to be able to present it verbatim in this issue of the NEWS. This is the account mentioned by Oemler in his letter to Thaddeus W. Harris, reproduced by R. P. Dow. The most detailed biography of Abbot previously published was written by Dow in the Journal of the New York Entomological Society, vol. 22. There one reads: "If Francillon was uncommunicative, Abbot was more so, especially concerning the first forty years of his life." The following account shows this to be untrue.

"Notes on my Life

I was born in the Year 1751, the first of June Old Stile at the West end of the Town London, in Bennet Street S^{t} James, my father was an Attorney at Law, I was his 2^{d} Son my brother dying before I was born, at the time of my leaving England I had 2 Sisters, Elizabeth & Charlotte, and a brother Thomas then 7 Years old. I had a very early love for Books laying out my pocket money for little Story books, and an early taste for drawing, which might be much increased by my father having a large & valueble collection of prints, of some of the best Masters, he had also many good paintings,

My peculiar liking for Insects was long before I was acquainted with any method of catching or keeping them I remember knocking down a Libella & pining it, when I was told it wou'd sting, as bad as a RattleSnake bite

My Father had a Country house, at Turnham Green 5 miles from London at £25 a Year rent, at the early part of my Life, I remember breeding some there, when I had no method of keeping them after I had done it when the Lease expired my father gave it up, as the grounds & house was divided, between the heirs of it I have a drawing of the house, which I will send you some time hence

In one of my Walks after Insects I met with a M^{r} Van Dest the famous flower painter, he invited me to come & see him, he had been a small Collector, showed me a pattern of the large Net, & gave me some rare Insects, I got me immediately a Net made & begun to understand keeping them better

My father got a M^{r} Boneau an Engraver, & Drawing Master, to give me lessons of Drawing at our own house, he was acquainted with a M^{r} Rice a Teacher of Grammer, who had likewise been a Collector of Insects, M^{r} Boneau, did not paint in Water Colours, he only understood the Rules of Drawing & perspective, he praised my Drawings of Insects, & got me through M^{r} Rice introduced to M^{r} Drury who had been president of the Linnean Sosiety & who then was allowed to have the best Collection of Insects both English & foreign of any one

I leave You to Judge my pleasure & astonishment at the sight of his Cabinets the first I had ever seen of the kind he very politely offered to lend me Insects to Draw, & we immediately became well acquainted That hour may be said to have given a new turn to my future life I had immediately a Mahogany Cabinet made of 26 Draws, covered with sliding tops of Glass, it cost me 6 Guineas, & begun to collect with an unceasing Industry I met with soon after & purchased a parcel of beautiful Insects from Surinam I soon begun to have a respectable Collection but not Satisfied with it I craved more

John Abbot. Self Portrait.

One Day a M^{r} Smeathman a young Man introduced himself to me, by saying he understood by M^{r} Rice, I was a brother Flycatcher, and had come to see me, I am not fond of Strangers, but his Address & discourse, soon settled an immediate acquaintance, he had a small collection, among them an English Purple Emperor, it is rare, I never met with any myself, I gave him a Guinea for it On the other hand in one of my walks I met with a hornet Moth, not larger than a hornet, a Gentleman offered me 2 Guineas for it, I thought the offer so liberal I let him have it, I also sold my duplicate English Insects at a good price This M^{r} Smeathman went to Africa on an intention chiefly to collect Insects, he staid 2 or 3 Years, & returned to England after I left it, he made a publication on it, particular an account of the Ants, & the large hillocks they make there, he was agoing out there again, as Depety Governor, to a British Establishment there, but was taken with a fever & died

I now began to entertain thoughts of going abroad to collect foreign Insects myself

I had bought Albins history of the changes of Insects coloured which was great use to me he had also published 3 vols of Birds, my father went to purchase it, at an Auction of Books, but did not & instead of it bought 4 Vols of M^{r} Edwards Birds, but so much superior to Albins, I was much pleased with the change but there was 3 more he bublished later, we went together to his house to buy them I carried some of my Drawings with me, he praised them much & desired me by all means to continue drawing, saying no doubt I wou'd be a bublisher hereafter of some work on Naturalhistory

About this time Lady Honeywood, widow of Gen^{l} Honeywood made me a present of Catesby's Nat. hist. of Carolina, a subscription Copy £20 price all this you may suppose increased my love in general for Nat. history

(cont. on next page)

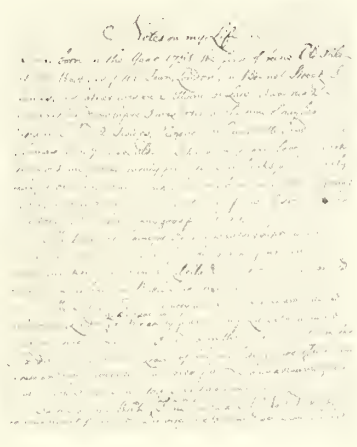
I was Articled to my Father as his Clerk for 5 Years to be an Attorney, but Deeds, Conveyances & Wills &c. was but little to my liking when my thoughts was ingrosed by Natural-history

In the beginning of the Year 1773, I was determined to come to America, but what part to choose was the only matter to determine on A Frenchman & his Son & come from Orleans, they praised that very much but I had met with a hist of Virginia painted in such glowing Colours, & the Voyage there being much shorter, I determined on Virginia, I sold my Cabinet of Insects, Drawings &c. had 3 smaller Wainscot Cabinets made to bring with me and engaged my Passage in the Royal Exchange, Capt.n Woodford the Ship had undergone a thorough Repair & was to sail in April but through delays did not sail untill July. In the Summer thro' the recommendation of a M.r Humphreys I was employed in making Drawings of Nat. history shells &c. at a good price, on Vellum at a Guinea apiece, A Gentleman I drawed for purswaded me delay my departure & draw for him, but it was to late

One Morning I went to the Coffee house to know when the Ship wou'd sale, was told she had sailed, but might perhaps overtake her in the River, before she got out to Sea.

I was a good deal surprized and alarmed, I had payed for my passage 25 Guineas, & my clouths & baggage was on board

I hired a post chaise & in Company with my father & mother & my brother Tommy then 7 Years old, we started to overtake the Ship before it got out of the River to Sea Uppon a point of Land on the River we got in sight of the Ship, but far a head, all the chance then was to go to Deal on the Sea coast, from whence She was to take her final Departure



Upon our arrival at Deal we saw with pleasure the Ship lying off, which had got there before us, I immediately hired a boat & got on board her I took leave of my Mother in tears, but my brother Tommy pleased with his Tour I suppose said he was sorry I was going to leave him, but hang him if he cou'd Cry

The Ship did not Sail till 3 days after, the wind not being fair- the Captain & some of the passengers next day went on shore, but I was determined to stay on board as I had got there There was 8 Cabin Passengers of us- among them was a M.r Goodall & his Wife an English woman who he had married during his stay in England, he was furnished by his Uncle a rich Merchant in London England, with a Cargo of Goods to set up a store in Virginia in Hanover County where he lived about 100 miles from the mouth of James River

In about a fortnight we got to Madeira, where we stop a day or to two to take in some Wine I landed there walked about the Town & dined at a hotel Altho it was a fine day I did not meet with any Butterfly or Moth

About the 9.th of Sep.r we made James River & anchored near the mouth, being 6 weeks on the Passage

I had a Letter of Recommendation from M.r Drury to a Minister in Dinwiddee County, but I had commenced an Acquaintance with M.r Goodall, & with his consent agreed to board with him the Parson being a total Stranger & living still much farther back in the Country

M.r Goodall got acquainted with a M.r Balflour who had a small Sloop & was going up James River on a commission to buy up a large quantity of Wheat to ship to England, he very politely offered to carry us up the River as far as old James Town, the first settlement in Virginia

Upon my landing there I found it was now deserted as a Town we there hired 2 Chairs, one for myself & the other for M.r Goodall & his Wife, with an Attendant who was to bring them back again

Soon after my arrival at M.r Goodalls it became very sickly in the neighbourhood, with fevers & fluxes, one of M.r Goodalls Negroes died of the Flux, & many of the neighbours; in one family 22 died in 2 years white & black leaving only a little Girl heir to the Estate

I was very fortunate in not being sick at all during my 2 Years stay in Virginia, and escaping a seasoning to the Country, & it was not till the 2.d year in Georgia before I had the Ague & fever

During the next Summer I was much disappointed in not meeting with the variety of Insects I expected, I was likewise very unlucky, I shipped a Cabinet of Insects for London, but the Ship was lost on the English coast, together with my Insects, I got much dispirited, & come to the resolotion to return to England again, the times likewise becoming alarming I was told that a Captain of a Ship bound for London was to be at the Court house, I went there with M.r Goodall, but the Captain not coming, I gave it out

In the mean time I got acquainted with one William Goodall, a Cousin to the former, a Young man, who had lived in Georgia, with his Relations, but who had married in Virginia he talked much in praise of Georgia, & wanted to go back there but had not the means to bear his Expences

The Colinies having appointed a day after which all Intercourse with England, was to be stopped, I fixed up another Cabinet of Insects to send to England, they was on board the boat in the River to the Ship, when a terrible September storm arose in the night, and the boat was lost together with my Insects again but to make me amends I have not lost any I have sent from Georgia.

The times now becoming very troublesome, & hearing that Georgia had not then joined the other Colinies, I joined W.m Goodall to come to Georgia together I furnished 2 horses & was to bear all our Expences, he one & a Cart, to carry his Wife & child & a little negro boy & our baggage

Thus fixed we started one day early in

(concl. on next page)

Decr. accompanied by a Cousin of his who lived in North Carolina, I must confess I parted with my Virginia friends with some regreet I felt much more depressed in my mind for some hours than when I left England

When we got to the Tar River N.C. we stopped at his Uncles where we was entertained & rested ourselves a week we continued our Journey, & early one day conversing with a Man that lived on the road, he found out that it was a cousin of his, we were then invited to stay till next day we continued on to Roanoke River, the ferry was kept by one Sprowles an Irishman, the cold set in so severe that we cou'd not cross the River for the Ice for sevl. days, Sprowles out of regard for my being a Countryman only charged us 14 shillings C.currency for houseroom, the snow also lay deep on the road, & the next night after crossing the River, had to scrape away the snow to lay our beds down by a light wood fire, but still sleept very comfortably

Early the next morning as we travelled the road forked & not unluckably we took the wrong one, we soon came to a deserted store & out buildings, we immediately took up Camp & stayed about a week till the snow melted, & the weather cleared up, we obtained here, being near a Scotch Settlement, some fresh provisions,& some good Cyder Thus recruited with fresh Spirits we got again into our direct road, & travelled for 2 or 3 days more,in the evening we came to a house on the road,it was very cold, & our horses had performed a good days travel, we was very desirous to take up, it was kept by an old woman, her son,& 2 or 3 daughters, the old Woman wou'd not let us stay, she said it was but 2 miles to another house where we might stay her son & daughters entreated for us, but the old hag was enexorable, we had to travel on full five miles more, we stopped, had a good fire & supper, to make amends for our late nights travel We traveled on to Peedee River, here Wm. Goodall had another Cousin an Overseer to a large plantation, We stayed here 2 or 3 days, I had now got a bad cold, but upon taking some stewed liquor, it cured it, & then continued our Journey on the road to Augusta we crossed the ferry, & Wm. Goodall sent word from Augusta by some persons he knew, for Wm. Moore his brother in law & pleasant Goodall his half brother,to meet us next day with fresh horses,which they did, and about dinner time got to Wm. Moores house, about 30 miles below Augusta about the beginning of February, performing our journey in about 2 months, in the middle of Winter but I arrived in good health & Spirits, had seen a good deal of the Country,& many amusing passing scenes, We took up our abode with pleasant Goodall who then kept bachelors house, till a house cou'd be built of logs for Wm. Goodall, on a part adjoining of Wm. Moores land When that was finished we moved there, & I took up my board with him for some time after

I was now settled in Georgia for a season I might now take leave of my notes, but as the first Years of my living in Georgia, contains much more of Adventure, than the former part of my life, and continued through such bad & terrible time, that I often reflect, upon the goodness of providence, in bringing me safely though them

When I am again settled I will continue them, with many curious Anexdotes of the Times, Indeed I often think if I had the Genius of a Scot or Bulwar, to colour some parts highly, & some occasional additions, It might make an amusing Novel of 2 vols"

In the above autobiographical notes the exact spelling, punctuation, and capitalization have been reproduced. The figure on page 29 is a photograph of the first of the ten pages written by Abbot. It seems unlikely that the expected account of his experiences in Georgia was ever written. However,this later period is much better known than the period covered in the above narrative. It is of interest to note that Abbot's biographers, S.H. Scudder and R.P. Dow, believed Abbot came to America about 1790, fully 17 years later than the actual date revealed above. Further, Dr. H. Hagen wrote that he was "privatlehrer" - private tutor -,an assumption that seems surely incorrect, since all of Abbot's writing reveals a very unfinished education. His actual means of livelihood remains unknown, but it is not unlikely that the sale of his fine water color drawings to John Francillon of London and Major John E. Leconte of Georgia and of Georgia butterflies to Francillon and several others provided him with an important part of his small income. His Savannah friend, Dr. Oemler, wrote with indignation of the unfair remuneration Abbot received from Leconte for his drawings- only sixpence each. He is known to have lived and collected, while in Georgia, principally in Screven and Bulloch Counties.

There can be no doubt that he never carried on any scientific research beyond his drawings and field notes on life history. However, he kept a collection of Lepidoptera and Coleoptera and his first letter to Dr. T.W. Harris was for the purpose of exchanging Georgia specimens for New England material. Dr. Oemler wrote in a letter to Dr. Harris: "You will be astonished when you hear that a man so long amusing himself with Natural History, should never have been inclined to pursue it scientifically, he, although now 83 years of age, is still in the simplicity [unadvanced state of scientific knowledge] of a School boy. He has been drawing plants since his boyhood and never knew any thing of Linnaeus' Classification till I demonstrated it to him and created his astonishment." It was Dr. Oemler who persuaded Abbot to write the biographical notes we are here publishing for the first time - a posthumous paper over a century late! Oemler forwarded them to Dr. Harris.

The last reference seen by us is a letter from Abbot to Harris dated "15th Novr. 1834", when he was 83 years old. For the last several years of his life he was completely deaf and hampered by corpulence. It seems certain that Abbot never married. Oemler went to the man with whom Abbot had been boarding shortly after Abbot's death, in order to save the last few drawings, but the children of the house had already destroyed them in play.

C.L.R.

PLASTIC MOUNTS FOR BUTTERFLY AND MOTH COLLECTIONS

by Otto Ackermann

The processes used in handling collections of Lepidoptera have undergone hardly any changes in the last 100 years or more. Tradition, rooted in the fact that many collections have sprung from other older ones, and the availability of standardized supplies are probably the main reasons for this unprogressive condition. Considering the ravages to which collections without constant care are subjected one wonders why concerted efforts were not made long ago to utilize some of recent technological advancements. A beginning was made some time ago with plastics after the pattern of nature's amber-embedded insects, but this process is too expensive for large scale use, and the mounts do not lend themselves to efficient storage.

The writer demonstrated a small collection of Lepidoptera in new plastic mounts devised by him at the 1939 convention of the Entomological Society of America at Columbus, Ohio. In the subsequent years he developed the method farther by applying, testing, and modifying it while building up a full scale collection in the new mounts. The original samples are now almost ten years old and show a constancy in shape and transparency which warrants the statement that the mounts possess the characteristics required for a permanent collection. The material employed is cellulose acetate which is chemically more stable than cellulose nitrate (celluloid). The mounts are produced commercially under the name "Transpar Mounts".

The author with part of his collection.

These mounts are completely transparent, easily assembled, airtight containers for individual Lepidoptera. Each casing consists of two identical halves made from sheet material having a center depression to provide space for the body of the insect. The assembling is accomplished by pressing together two edges by means of a specially designed clamping tool, and passing a brush saturated with acetone along the seam. The liquid is drawn into the contact area to a depth of about $\frac{1}{4}$" and fuses the surfaces together. The process requires about 15 seconds for each seam. The two parts of the mount are curved so that, after the first seam is formed, the halves spread apart, leaving ample room for inserting the specimen. These mounts lend themselves readily to permanent labelling. The label, consisting of ordinary paper, is placed against the underside of the mount and is coated with acetone. The latter penetrates the paper and fuses it instantly to the surface of the transparent model.

Space economy obviously is a primary requirement for mounts if they are to be used in a collection. Therefore the series of mount sizes has been so chosen that closely fitting containers are available for all types of specimens. It was found that 16 sizes, suitably proportioned, adequately cover the whole range of the North American Lepidoptera. The smallest container is $1\frac{1}{2}$" x $1\frac{1}{4}$", the highest one (for Luna moths) 5" x $5\frac{3}{4}$", the one for the largest wingspread $6\frac{1}{2}$" wide. Recently the writer built some special mounts for a collector in the tropics; the dimensions were 9" x 11", with 3" body depression.

A satisfactory collection lay-out in which the specimens may be arranged in a manner permitting convenient inspection and favorable display is achieved by standardized panels 12" x 20". The panels consist of sheets of composite structure with white front surface and black trimming. They carry strips of transparent material, each fastened to the panel along its lower edge by means of staples. The bottom edges of the mounts are inserted between the strips and the panel. The mounts are thereby firmly held in place and yet can easily be removed. Overlapping of mounts permits a large number of them to be placed on one panel. A set of five panels, one each with 6,7,9,12 and 16 strips respectively, has been found to answer all requirements. The 6 strip panel holds 12 of the largest mounts while the 16 strip type accomodates as many as 128 of the smallest ones. The display panels are best stored in book case type cabinets with shelves spaced slightly more than 20" apart, and are kept separated by 1" wide wooden strips on the bottom shelf and by small pegs at the top. The total width per panel is $1\frac{3}{8}$". With this type of collection nearly twice as many specimens can be stored in a given space than with the conventional glass-topped cases.

His own experience as well as the enthusiastic reception which the new system has been given by the few collectors to whom it so far has been made available, have convinced the author that the time for general application among Lepidoptera collectors is at hand.

Editor's Note: A notice which will guide NEWS readers wishing to obtain Transpar Mounts is on page 35. We have seen a sample of the mounts and especially urge Lepidopterists who occasionally or often show their collection to laymen to investigate this innovation.

95. Antram, Chas.B., "Note on the Butterflies of the New Forest Area in 1947, in Connection with Weather Conditions." Ent.Rec. & J. Variation, vol.59: pp.128-130. Nov.1947.

96. Balland, René, "Une Migration de Pieris brassicae L. (Lépidoptères)." (In French). La Feuille des Naturalistes (Paris), vol. (n.s.) 2: p. 106. Nov.-Dec. 1947.

97. Beall, Geoffrey, "The fat content of a butterfly, Danaus plexippus Linn.,as affected by migration." Ecology, vol.29: pp.80-94. Jan.1948. The fat content just before migration in Ontario is very high and of course diminishes greatly in migration,specimens in Louisiana having 2-15% of dry weight, while in Ontario it was 30-210%. In Feb. in California it was 40%. In Ont. ♂♂ were heaviest, in Calif. ♀♀, in La. equal. Summer Ont. populations had 20%. Illustrated by many tables.

98. Blackie, J.E.H., "Frequency and Distribution of the Commoner British Butterflies." The Entomologist, vol.80: pp.256-258. Nov. 1947.

99. Brandt, William, "Note on some Harmodia species (Lep. Agrotidae)." Notulae Entomologicae(Helsinki), vol.27: pp.1-4, pls.I, II. 20 Nov. 1947. Describes as new: H. canescens(Afghanistan), H. drenowskii ssp. khorassana(Iran), H.wiltshirei(Afghanistan), H. compta ssp. kashgaia(Iran), H. compta ssp. afghana(Afghanistan), H.imitaria(Iran), H. paghmana(Afghanistan), and H. macilenta (Afghanistan). All very briefly described. Gives notes on H.ignicola Warr. and H.drenowskii Rbl. Photos of H. lucida and all above except wiltshirei and typical drenowskii. Figures ♂ genitalia of ignicola, lucida, and luteocincta tristis and all the new entities except the 2 races of compta.

100. Bryk, Felix, "Über die auffindung einer unbekannten Linnéschen "Papilio"-Type im Riksmuseum von Stockholm(Lep:Brassolidae)." (In German). Entomologisk Tidsckrift(Sweden), vol.68: pp.196-198. 1947. The type of Caligo teucer (L.) rediscovered.

101. Campbell,J.O.,"Some Notes on Lepidoptera collected at Darwin during November, 1945." Australian Zoologist (Sydney), vol.11: pp. 159-160. 20 June 1947. Gives a list of 27 spp. of butterflies taken.

102. Champie, Clark, "Tomato Worm Invaded." Natural History, vol.56: p.466, ill. Dec., 1947. Popular account of parasitism of Protoparce larva by braconid wasps. Rather poor photos.

103. Darlow, H.M., "Observations on Variation and Hybridisation in Zygaena lonicerae, Esp., and Zygaena filipendulae,L. (Lep.)." Ent. Record & Journ. Variation, vol.59: pp. 133-136. Nov. 1947.

104. Goodson, F.W., "Notes on the Genus Eumaeus Hübner (Lep., Lycaenidae)." The Entomologist, vol.80: pp.273-276. Dec. 1947. Studied the 700 specimens in British Mus., and recognizes 5 spp., aside from "Theorema group": childrenae, toxea, minyas, toxana, atala. No new names.

105. Gould,George E., "Some Notes on the Biology and Control of Tomato Hornworms." Proc. Indiana Acad. Sci., vol.56: pp.157-167. 1947. Excellent biological notes, distinguishing characters of Phlegethontius sexta and quinquemaculata.

106. Hovanitz, William, "A Graphic Method of illustrating ecological and geographical distributions." Ecology,vol.29:pp.121-122, fig.1. Jan. 1948. Gives a chart showing altitudinal and latitudinal distribution of North and South American Pieridae genera. A very useful form of graphic illustration.

107. Kaisila, Jouko, "Euzophera fuliginosella (Hd.) Hein. (Lep., Pyralidae) in Finnland gefunden." (In Finnish & German). Ann. Ent. Fennici(Helsinki),vol.12:p.76. 15 Dec.1946.

108. Kanervo, Veikko, "Sporadic observations concerning diseases in certain species of insects. 3.Diseases attacking Plutella maculipennis Curt." (In Finnish). Ann. Ent. Fennici (Helsinki), vol.12: pp.143-153, 2 figs. 30 Jan. 1947. Found 3 spp. of Entomophthora(fungus) and Fusarium and Penicillium in Plutella, excercising good control of the moth. (English summary).

109. Kiriakoff, S.G., "Bemerkingen over het phylogenetisch Lepidopteren-Systeem van Auguste Lameere." (In Dutch). Natuurwet. Tijdschr. (Gent), vol.29: pp.159-169. 12 Nov. 1947. Explains in detail, with comments, Lameere's classification of Lepidoptera, which hardly differs from most other extant systems. Unfortunately, this is the same confused method Lameere used in the great Précis de Zoologie, in which names have French, rather than Latin endings.

110. Krogerus, Harry, "Zwei neue Kleinschmetterlinge aus Fennoskandien." (In German). Notulae Entomologicae (Helsinki), vol.27: pp.4-8, figs.1-4. 20 Nov. 1947. Describes as new Endothenia adustana(Lake Ladoga,Finland)and Blastobasis obsoletella(N.Finland) and gives photo of each and ♂ genitalia of adustana and venation of obsoletella.

111. Krogerus,Harry,"Argynnis laodice Pall. i Finland." (In Finnish). Not.Ent.(Helsinki), vol.27: pp.30-31. 20 Nov. 1947.

112. Lempke, B.J., "A Hereditary Form of Spilosoma lutea, Hufn." Ent. Rec. & J. Variation, vol.60: pp.4-5. 15 Jan. 1948. Describes as new: form benesignata, a dominant sex-controlled form appearing in a series of ♀♀ in the F_1 and F_2 reared from a normal wild ♀ from Holland. A significant discovery,but not properly receiving a Latin name.

113. Muspratt, Vera M., "The Migration of Celerio lineata livornica Esper (Lep. Sphingidae) in Europe in 1946." The Entomologist, vol.80: pp.249-252. Nov. 1947. 1946 was a year of heavy migration in western Europe. This paper reminds us that we know little of N.Am. migrations of lineata.

114. Neves, C.M.Baeta, "La Dioryctria splendidella H.S. (Lepidoptera- Pyralidae) espèce nouvelle pour l'entomofaune Portugaise." (In French). Bull.Soc.Portugaise Sci.Nat., vol.14: pp.65-69, 2 figs. Jan. 1943.

115. Palmen, Ernst, "Ein auffallender Massenflug von Phytometra gamma L. und Pyrameis cardui L. (Lep.) in Südfinnland." (In German). Ann. Ent. Fennici (Helsinki), vol.12: pp.122-131. 30 Dec. 1946.

116. Querci, O., "Zygaena ignifera." Ent.Rec. & J. Variation, vol.59: p.95. July/Aug. 1947. Brief note.

117. Querci, O., "The Variations of Anthrocera carniolica ssp.magnaustralis, Verity." Ent. Rec. & J. Variation, vol.59:pp.97-98. Sept. 1947.

RECENT LITERATURE (cont.)

118. Réal, M.P., "Capture d'un Gynandromorphe Hybride." (In French). Bull. Mens. Soc. Linn. Lyon, vol.16: pp.56-58, fig. Mar. 1947. Describes and figures a bilateral gynandromorph (left side ♂, right ♀) which is a hybrid between Augiades sylvanus and A.comma, taken in Ain,France.(See #119).

119. Réal, P., "À propos du Gynandromorphe d'Augiades Capturé dans la Nature." (In French). Bull.Mens.Soc.Linn.Lyon, vol.16: p. 201. Dec. 1947. Reports that the gynandromorph is not actually a hybrid, but is only A. comma. (See #118, above).

120. Rougeot, P., "Note sur les Papillons Gabonais du Genre Drepanoptera Roths." (In French). Bull. Mens. Soc. Linn. Lyon, vol.16: pp.74-75. Notes on D. rectifascia, vacuna, albida, ploetzi.

121. Siverly, Russell E., "A Morphological Study of the Male and Female Genitalia of Heliothis armigera (Corn Earworm Moth)." Am. Midland Naturalist, vol.38:pp.712-724, figs.1-11. Nov. 1947. The drawings show the details of male and female genitalia from several angles. The procedure for genitalic preparations is given(mostly after Busck, 1932), all terms used are defined. The paper gives an extensive bibliography.

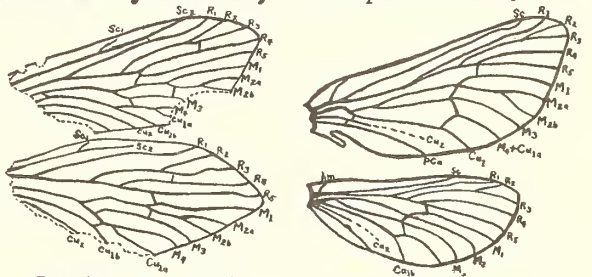
122. Stempffer,H., "Note sur les Ornipholidotos du groupe de muhata Dewitz (Lepid. Lycaenidae)." (In French). Rev. Zool. & Bot. Africaine (Belgium), vol.40: pp.165-174, figs.1-7. 6 Nov. 1947. Describes as new: O. gabonensis (Gabon), O. ugandae(Uganda), O. katangae (Katanga), and O. overlaeti (Belgian Congo), and redescribes O. kirbyi and O. muhata. Figures pattern and ♂ genitalia of all 6 spp.

123. Testout, Henri, "Révision des Catalogue des espèces françaises du genre Erebia(Lépid.Satyridae)." (In French). Bull. Mens. Soc. Linn. Lyon, vol.16: pp.67-71, 83-86, 202-206. Apr., May, Dec. 1947. Notes on the Erebia pronöe group, including pronöe, lefebvrei, scipia, stirius, montanus, neoridas and the E. pandrose group, including oeme. To be continued. Lists all aberrations as synonyms, but goes into painful detail on named "formes individuelles".

124. Testout,Henri,"Révision des Saturnioïdes Macroures (Actiens de Sonthonnax)." (In French). Bull. Mens. Soc. Linn. Lyon, vol. 16: pp.99-116, 6 figs., map. June 1947. Treats in great detail with photos of ads.& genitalia Graellsia isabelae and its French race, galliaegloria. Gives 186 references.

125. Testout, Henri, "Contributions à la Connaissance des Parnassius Latreille (3e partie)." (In French). Bull.Mens.Soc.Linn. Lyon, vol.16: pp.170-173. Oct. 1947. Describes as new race anneciensis of P.apollo, from Upper Savoy. Redescribes race debilis.

126. Tindale, Norman B., "Triassic Insects of Queensland. 1. Eoses, a Probable Lepidopterous Insect from the Triassic Beds of Mt. Crosby, Queensland." Proc.Roy.Soc.Queensland, vol.56: pp.37-46, pl.V. 27 Apr.1945. Describes as new the genus and species Eoses triassica and the family Eosetidae and suborder Eoneura to contain it. The bed from which the fossil wings were taken is considered to be of Upper Triassic age and is probably 180 million years old. The oldest definite Lepidoptera are from the bottom of the Tertiary of Colorado (Green River) and are 100 million years younger than Eoses. Thus,if Eoses is a true Lepidopteron its discovery is of unsurpassed interest, showing the point of separation of Lepidoptera from Mecoptera. Tindale shows clearly that it should be so considered and has venation very close to the modern Hepialidae, The fore and hind wings are almost identical. The venation of the fossil is strikingly close to the forewing of an aberrant male of Hepialus sequoiolus from Calif., in which vein M_2 is forked. Another character known elsewhere only in aberrant hepialids is the separation of M_4 and Cu_{1a}. To the reviewer Tindale's placement of Eoses in the Lepidoptera seems sound, but the erection of a special suborder is questionable. Eoses seems to necessitate no shocking modification of the Homoneura. The fore wings of E. triassica and the Hepialus sequoiolus, as shown by Tindale, are copied below.



EOSES TRIASSICA HEPIALUS SEQUOIOLUS

127. Turner, A. Jefferis, "A Revision of the Australian Cossidae (Lepidoptera)." Proc. Roy. Soc. Queensland, vol.56: pp.47-70. 19 June 1945. Describes as new the genera: Catoxophylla, Nepiomorpha, Brachycyttara, Trigonocyttara, all monotypical, and the species: Catox. cyanauges (W.Austr.), Nep. cineraria (N.Queens.), Brachy. cyclospila (W. Austr.),Trig. clandestina(Queens.), Xyleutes zophospila(W.Austr.), X. plocistis (S. Austr.), X.arachnophora(Vict.), X. epicycla (Queens.), X. epistícha (Queens.), X. reticulosa (Queens.), X. coscinophanes (W. Austr.), X. euplecta (W.Austr.), X. polyspora (S.Austr.), X. tanyctena (Queens.), X.pycnosticta(S.Austr.), X.nubila(Queens.), X.diaplecta(Queens.), X.euryphaea(Queens.), X. leucolopha (Queens.), X. didymoplaca (W. Austr.), X. platyphaea (Queens.), Dudgeonea lychnocyla (Queens.), Culama dasythrix (W. Austr.), Macrocytta pamphaea (Queens.). Redescribes sev. spp. and gives some new synonymy. Gives key to all Australian genera. In all, lists 15 genera and 76 spp., with all spp. and 12 genera endemic in Australia. The complete lack of figures is to be regretted in this extensive revision. Index to genera and spp. given.

128. Wheeler, L.Richmond, "Butterflies around Montreux, Switzerland." Ent. Rec. & J. Variation, vol.59: pp.130-133. Nov. 1947. Annotated list of 40 spp.

Erratum: Recent Lit.#24, line 21 should read "was not .. a mediocre entomologist". This slip in preparing copy changed Stempffer's meaning entirely, for which we apologize.

EREBUS ODORA & THYSANIA ZENOBIA IN WISCONSIN.- Back in 1938 in August while "sugaring" for Catocalas, two males and one female E. odora were captured in a SINGLE NIGHT, in a woods near here. One very large male was in nearly perfect condition, the other more torn. In July of 1942 we observed a large male on bait and on June 17 of this year (1947) we missed capturing another male.

In Sept. of 1945 a farmer friend of mine brought in a large moth he found in a whey barrel on his farm. It turned out to be a very torn male T. zenobia. In August 1940 I observed a large specimen on bait. In September 1942 a very fine male T. zenobia was attracted to light on my back stoop. I captured it by the simple method of opening the back door and letting it fly in. It displayed one of its habits of turning head downward very quickly whenever it alighted on a vertical surface.

I find it difficult to believe that these moths can be blown by winds this far north and still be in quite perfect condition and also occur so frequently. We are located on the west shore of Lake Michigan only about 200 miles south of the Canadian border. Could they perhaps breed farther north than the tropics or near tropics?

- S.E. Ziemer, Kewaunee, Wis.

OENEIS CHRYXUS IN WISCONSIN. L.W. Griewisch has reported having collected Oeneis chryxus strigulosa in northern Wisconsin in 1947. The identification was made by Mr. C.F.dos Passos who reported this to be the first record known to him of chryxus from Wisconsin.

ADDITIONS FOR THE 1947 SEASON SUMMARY.- A.G. Lauck, of Alton, Illinois, has sent additional records from the weakly-represented northern Rocky Mt. area, as well as Colorado. In the Grand Teton Mts., July 8 to 11, he found Parnassius smintheus, Pieris napi, Anthocharis sara, Boloria myrina, Speyeria mormonia and callippe, Euphydryas gillettii, Oeneis jutta and chryxus. This is another late record for A. sara. The B. myrina appeared to be race tollandensis. The Speyeria were abundant. E. gillettii were almost through flying for the year and specimens were very worn. The O. chryxus were very large and approached O. nevadensis. Neophasia menapia were sought but not out at this time.

On Black Tail Butte near Kelly, Wyo., on July 12 he took a large series of fresh Eumenis ridingsii. The Speyeria were also common and Limenitis weidemeyerii was found.

In Rocky Mt. Nat'l Park, Colo., from July 15-18 Lauck found P. smintheus, Nymphalis milberti, Melitaea arachne, Erebia magdalena, Oeneis lucilla, and Lycaena snowi quite common. E. magdalena was at its peak and was flying with the much scarcer L. snowi, whereas O. lucilla was just beginning to come out. Erebia epipsodea and callias, and the alpine Colias and blues were not flying on the high ridges on those dates.

Lauck reports the summer and fall very poor for butterflies in Illinois, with some of the usual fall species not found at all.

(Other additions to the 1947 Summary are on p.22 - Wyatt & Guppy.)

WINTER COLLECTING IN CALIFORNIA IN 1947-48. The mid-winter collecting was only slightly retarded by lack of rain. It seems that most of our November to February fliers feed on evergreens or fall-blooming composites neither of which depends much upon the weather for its life cycle. In November the Euxoa are at their height. About 17 different species were taken. December brought several species of Orthosia which range thru 'til February. Engelhardtia ursina was seen for the first time in quantity. Engelhardtia appeared for the first time on the western Mojave last year. The Rancora and allied cuculliids are on the wing in January with R. serraticornis and R. comstocki common and Lathosea pulla not so common. C. Henne took the grand prize of a Lathosea dammersi ♂ about three weeks ago near Warner Hot Spring, San Diego Co. We made a return trip after this rarity without success due to a combination of our late arrival(practically all of the mid-winter Heterocera are on wing from dusk to an hour and a half later only) and a sudden cold snap. Starting the later part of January and running thru February Graptolitha longior and G. georgii holocinerea are flying but quite rare. All in all we manage to keep our mounting boards filled during the winter.

Claude I. Smith, Garvey,Calif. - 7 Feb.1948.

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LIFE HISTORIES OF NORTH AMERICAN LEPIDOPTERA

North American Lepidopterists interested in life histories of N. Am. Rhopalocera are referred to the following detailed bibliographies which also give host plants:

1. Edwards, Henry, "Bibliographical Catalogue of the Described Transformations of North American Lepidoptera." Bulletin, U.S. Nat. Museum, no.35. 1889. (Includes moths).
2. Davenport, D. & V.G. Dethier,"Bibliography of the Described Life-histories of the Rhopalocera of America North of Mexico 1889-1937." Entomologica Americana,vol.17(n.s.), no.4. 1938. (No duplication with Edwards. Butterflies only).
3. Dethier, V.G., "Supplement to the Bibliography of Described Life Histories of the Rhopalocera of America North of Mexico." Psyche, vol.53:15-20 (No.1). 1946.

The Edwards paper is available at a reasonable price from Sherman, 132 Primrose Ave., Mt. Vernon, N.Y. The Davenport & Dethier paper is obtainable from R.R. McElvare,Treasurer, 76 Ivy Way, Port Washington, N.Y. The Dethier supplement is probably obtainable only by purchasing the entire number of Psyche. Single copies from the editor, Prof. F.M. Carpenter, Biological Labs., Harvard Univ., Cambridge 38, Mass., cost $0.85 each.

If one or more members with extensive library facilities available will undertake to bring up to date the moth section of Edwards' bibliography, the Lep. Soc. will endeavor to publish it. A check list of host plants, rather easily assembled from the above three papers, will also be welcome for the NEWS.

C.L.R.

NOTICES BY MEMBERS

"TRANSPAR MOUNTS": The material for starting a collection in Transpar Mounts is available in the "Transpar Mount Butterfly Collection Kit". This contains 116 mounts of all sizes, five display panels and tools; price $32.50. Additional packages of mounts and individual display panels can be ordered separately. Further information on request. Otto Ackermann, 639 Walnut Street, Irwin, Pa.

BRAZIL MACROLEPIDOPTERA offered in exchange for North American Papilios and Saturniidae. Will gladly collect Noctuidae and Geometridae for exchange. H. R. Pearson, Postal Box 2206, Rio de Janeiro, D.F., BRAZIL.

Can offer Callosamia angulifera, Citheronia regalis, etc. for uncommon Sphingidae and Catocala needed for my collection. A very large set of duplicates of commoner Lepidoptera available in exchange for commoner species from elsewhere. C.W. Baker, P.O. Box 455, Waynesburg, Ohio.

Mr. Heinz Jensen, 54 Hyltebjerg Alle, Vanlose, Copenhagen, DENMARK, wishes correspondence with U.S.A. Lepidopterists, especially in the Southeast. He is willing to collect any Scandinavian Lepidoptera and is interested in exchanging books and journals on Lepidoptera.

BUTTERFLIES & MOTHS OF THE HIGH ALPS - All Lepidoptera of the Austrian Tyrol offered. Special rarities are species such as Colias palaeno, Argynnis thore, Erebia glacialis & epiphron, Orodemnias quenselii, Plusia spp. Prices according to Staudinger & Bang-Haas List. Send list now of species desired. Some material on hand. Extensive collecting planned for the coming season.
Dr. H. Wilcke, Kössen/Tyrol, Nr.199, AUSTRIA.

RHOPALOCERA AND ZYGAENIDAE OF SOUTHERN FRANCE offered in exchange for North American Rhopalocera, Zygaenidae (including Procris = Ino), etc. Write in English. F. Dujardin, 25 rue Guiglia, Nice (A.M.), FRANCE.

Large quantities of Philotes sonorensis, Anthocaris sara, Speyeria macaria, Tharsalea arota for exchange for N.Am. Rhopalocera, esp. Theclinae and Hesperiidae. Will exchange Speyeria nitocris for S. diana. D.E. Parker, 1033 S. Beacon Ave., Los Angeles 15, Calif.

EAST AFRICAN BUTTERFLIES, for sale or exchange. Want American species, particularly South Am. R.W. Barney, Govt. African School, Kakamega, Kenya, East Africa.

NAMED INDIAN BUTTERFLIES and unnamed moths from districts of Poona, and Dehra-Dun for sale. E. Hug: airmail c/o Mrs. J.Graf, Zeughausstr. 8, Chur, Switzerland, or regular mail: Vaudrevange-Saar, Wilhelmstrasse 3, Terr. Saare, Via Saarlouis, FRANCE.

Will exchange WASHINGTON LEPID. & Coleoptera for N. American Rhopalocera, esp. Euphydryas & Mitoura. Eu. taylori available in large series. Many fine specimens from Olympic Mts. and Puget Sound Basin. D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

Papered MANITOBA RHOPALOCERA for exchange for tropical Lepidoptera. About 40 species, all with complete data. List available on request. C.S. Quelch, Transcona, Manitoba.

GUADALCANAL Lepidoptera (esp. Rhopalocera), of almost every native genus, offered in exchange for needed N. American species. T.W. Davies, 9734 Castlewood St., Oakland, Calif.

Wanted: Philotes of N. America for a systematic study, for purchase, examination, or exchange. Rudy Mattoni, Dept. of Entomology, Univ. of Calif., Los Angeles 24, Calif.

FOR SALE: Insect collection boxes, 9 x 13 x 2 1/2 inches, dovetailed corners, the finest composition pinning bottoms, sanded but not finished, beautiful redwood throughout, hinged, with latches- $2.10 apiece, $24 dozen, F.O.B. Beverly Hills. Bio-Metal Associates, P.O. Box 346, Beverly Hills, Calif.

Wanted for determination, exchange, or purchase: ARCTIIDAE of the Neotropical Region (especially Central America & West Indies), as well as North American ADELOCEPHALIDAE(Sissphingidae). Correspondence invited.
Prof. Lauro Travassos, Laboratório de Helmintologia, Instituto Oswaldo Cruz, Caixa Postal 926, Rio de Janeiro, D.F., BRAZIL.

FOR SALE - THE BERRY COLLECTION
The results of 18 years in Florida of collecting and exchanging. Many very rare species. 2000-4000 mounted specimens; 6000-8000 specimens in papers. Over 1100 different named forms. Especially rich in Hesperiidae, Lycaenidae, Sphingidae, Catocala. For details write:
Dean F. Berry, Box 146, Orlando, Florida.

FOR SALE: Boloria, Oeneis, & Erebia from the Far North. R.J. Fitch, Rivercourse P.O. via Lloydminster, Saskatchewan, CANADA.

LIVING MATERIAL

PUPAE OF PAPILIO ZELICAON and P. PHILENOR HIRSUTA from California, full data, offered in exchange for papered butterflies needed for our collections.
Thomas W. Davies, 9734 Castlewood St.
William A. Hammer, 5300 Walnut St.
Oakland, California

Citheronia regalis & Euparthenos nubilis pupae Catocala cara, concumbens, & amatrix eggs. Available alive. Herman Wilhelm, Buckingham Road, R. D. 1, Willimantic, Connecticut.

DESIRE LIVING PUPAE OF LYCAENIDAE (esp. Theclinae). Offer in exchange papered Calif.spp. Graham Heid, 11745 Hesby St., N.Hollywood, Cal.

What have you to offer in exchange for LIVING PUPAE of Telea polyphemus? R.J. Ford, 3266 Ardmore Ave., South Gate, Calif.

Cocoons of Platysamia euryalis, gloveri, columbia, and Callosamia angulifera and calleta desired. Correspondence invited. Buy, sell, exch. all saturniids. R.L. Halbert, 444 N. Normandie Ave., Los Angeles 4, Calif.

QUESTIONS AND ANSWERS

Q. "Are there any visible genitalic differences between Halisidota tessellaris and Halisidota harrisii, or has anyone studied the genitalia?"

A. Dyar thought he could see a slight difference, but I have been unable to see it. (See Can. Ent. 33: 30, 1901).

Q. "In Hinton's paper reviewed in the Lep. News (July issue) the Micropterygidae are shown to be less related to the other Lepidoptera than are the caddis-flies. Please explain the reasons for this conclusion, especially reasons other than Hinton's."

A. I do not agree with Hinton in this. His evidence is largely the preservation of primitive features in the Micropterygidae, shared by the Trichoptera and not by normal Lepidoptera. I know no reasons other than Hinton's, but he promises to publish the latter more fully shortly. I personally think shared specializations more important, and would cite the fully scaled wings, shared by Micropterygidae and higher Lepidoptera, and by no early Trichopteran; also the epiphysis(cleaning brush on fore tibia). I know of no corresponding specialization shared by Micropterygidae and Trichoptera and not Lepidoptera.

- W.T.M. Forbes

Additions on Insecticides

Here are a few points supplementary to Mr. dos Passos' useful discussion on page 27. First, we have seen that the creosote method is effective in his collection. However,careful testing of many fumigants has resulted in virtually all museums in North America turning to paradichlorobenzene (variously known as P.D.B., Dichloricide, etc.). P.D.B. not only repels the dermestid beetles, but usually kills them. Also, it is very effective in preventing the growth of the molds Mr. dos Passos encountered. Its principal drawback is its volatility - the crystals evaporate within six months, although the vapor remains in a tight case longer. It is good insurance to add a little pulverized naphthalene to the P.D.B., since it evaporates very slowly and usually prevents infestation if for some reason one fails to renew the P.D.B. Collectors should, of course, test and compare creosote and P.D.B. for themselves.

Second, D.D.T. is a very dangerous chemical for the Lepidopterist to use, if he carries on rearing or expects to do so. It is well known that D.D.T. solution sprayed in a room may wipe out all the living larvae caged in a nearby room. If collectors wish to use D.D.T. to keep pests out of the collection the collection room must be as remote as possible from any rearing cages. However, if D.D.T. is to be used (and it seems to be the only solution for Riker Mounts), it should be applied with a paint-brush 3/4" wide along every joint of each insect box as well as the cabinet itself. For this purpose use a solvent which will not harm the finish of the wood.

C.L.R.

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NEW MEMBERS

Beirne, Dr. Bryan P., 4, Tobernea Terrace, Monkstown, Co. Dublin, EIRE.
Comstock, W.P., 117 Lincoln Ave.,Newark 4,N.J.
Euting,Neal A.,Rt. 4,Box 11B, Oconomowoc, Wis.
Graves, J.D.,1711 Short St.,Berkeley 2,Calif.
Harvey, Bill B., Box 52, Wall, South Dakota.
Himalayan Butterfly Co., Shillong, Khasi Hills, INDIA.
Okada, Yoshio,Yanagida-Cho,Saga,Kyoto, JAPAN.
Rockingham, Lt. N.W., Bay Tree Cottage, South Rd., Hayling Island, Hampshire, ENGLAND.
Sherwood, Collins E., Newark Valley, N.Y.
Silva Cruz, Maria A. da, Quinta de S. Joaõ, Candal, Vila Nova de Gaia, PORTUGAL.

The following notice is in the Feb.16, 1948, issue of the Proc. Ent. Soc. Brit. Columbia:

"REVISION OF THE CHECK LIST OF THE MACROLEPIDOPTERA OF BRITISH COLUMBIA - Any records intended for inclusion in the pending revision of this check list should be sent as soon as possible to J.R.J. LLEWELLYN JONES, "ARRANMORE", R.M.D. No.1, COBBLE HILL, B.C. Information relating to date of capture of imagines, localities, and larval food plants will be especially welcome."

The pages of listings of "Recent Literature on Lepidoptera" are being reprinted, on one side of the page only, for clipping and pasting on file cards and may be obtained inexpensively for the complete set for numbers 3-9. Members outside of the Americas may receive these pages at no cost merely by requesting them.

THE LEPIDOPTERISTS' NEWS is the monthly periodical of The Lepidopterists' Society. Membership is open to anyone interested in the study of butterflies & moths. The 1948 dues, including subscription to the NEWS, are $1.50 for Regular Members and $3.00 or more for Sustaining Members. Please make remittances payable to : Charles L. Remington.
Address all Society correspondence to:
P.O. Box 104, Cambridge 38, Mass., U.S.A.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY

P.O. Box 104, Cambridge 38, Massachusetts, U.S.A.

Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

Volume II April 1948 Number 4

LEPIDOPTERA BIOLOGY -- OPEN FOR STUDY

Biology is literally the "science of life". In the present discussion it will be used in the strictest sense, to mean the study of LIVING Lepidoptera, as contrasted to the study of dead collection specimens. A large proportion of our Society members are not professional entomologists, and it is these enthusiastic avocationists whose attention the NEWS editors have endeavored continually to direct toward the study of Lepidoptera IN THE FIELD. What are the aspects that a lepidopterist can study methodically in whatever region he may live? There are seven primary ones: (1) phenology; (2) habits; (3) habitat; (4) host plants in each region; (5) enemies; (6) population composition; (7) over-wintering.

(1) PHENOLOGY. The season-to-season trend in Lepidoptera occurrence can be expected to give valuable information for all biologists. Lepidoptera are especially useful as a tool in the study of yearly patterns because they are so well-known taxonomically and their appeal to non-professionals has resulted in a large number of widely-distributed active field workers. The only region well-known phenologically is Great Britain and, to a much lesser degree, western Europe. The annual Season Summary of the Lep. Soc. is an effort to gather such information for North America, and we hope to expand it to include other parts of the world as organized cooperation develops. Each collector can keep his own records and will find it interesting to compare them year by year. Several Lep. Soc. members keep field notebooks and record the species taken or seen, their abundance, and their condition after each collecting trip. Some of these lepidopterists try to get out at least once each week throughout the collecting season, in order to have a continuous record. Unfortunately, most collectors fail to keep a record of species which are not collected because of commonness. Phenological records need to be correlated with weather data.

(2) HABITS. Very little is known of the special habits of different species, especially as they differ from related species. Accurate observations are needed on the manner of flight, sociology (which species "chase" others, which are gregarious, etc.), preferences of food of adults (which flowers are chosen, which species are attracted to dampness, to carrion, to dung, to sap flows, etc.), color preferences, the normal resting position (wings open or closed, head upward or downward), location of night resting for diurnal species and of day resting for nocturnal species, aspects of copulation (type of courtship, duration of coitus, time of day or night of coitus, etc.), oviposition habits, and larval feeding habits (whether diurnal or nocturnal, what part of plant eaten, defensive actions, gregariousness, etc.).

(3) HABITAT. The precise location of the ova, the larva (day and night), the pupa, and especially the adults. In all species we need to know just where the adults live. For example, Erebia theano ethela is restricted to small sphagnum bogs; E. magdalena is in the same area, but frequents only the dry rock-slides; E. tyndarus callias, flying nearby, is only on vegetated, less rocky spots; and E. epipsodea is somewhat lower, usually in tall lush grass. The precise altitudinal distribution is not well-known, and in mountainous regions would make a profitable study.

(4) HOST PLANTS. Here is one of the most important and, surprisingly, least accurately known aspects of Lepidoptera biology. Many species feed on quite different plants in different regions. Euphydryas phaeton eats Chelone glabra in New England, but in Missouri the host is Aureolaria flava. The Lep. Soc. expects eventually to publish a list of known host plants of North American butterflies (and of other groups) as information is assembled. There is a plant identification service available (see NEWS, vol.I: p.25).

(5) ENEMIES. It is especially important that all parasites obtained in rearing Lepidoptera be saved and complete data, including the name of the host, kept with them. Insects, birds, lizards, and other animals which prey on larvae or adults should be noted.

(6) POPULATION COMPOSITION. The mathematically inclined lepidopterist can assemble scientifically valuable data on the percentages of various forms in local populations of each species. In Catocala lacrymosa, what part of the population are the striking forms?; in Lycaena hypophleas, how frequent are the aberrations?; in Papilio glaucus, what percentage of the females are black? and so on.

(7) OVER-WINTERING. In too few cases we know the life history stage -- ovum, larva, pupa, or adult -- in which a species passes the winter. But we especially need to know whether Hemiargus isola, Eurema mexicana, Agraulis vanillae, and others survive the winter in any stage in Colorado, Kansas, and Missouri.

C.L.R.

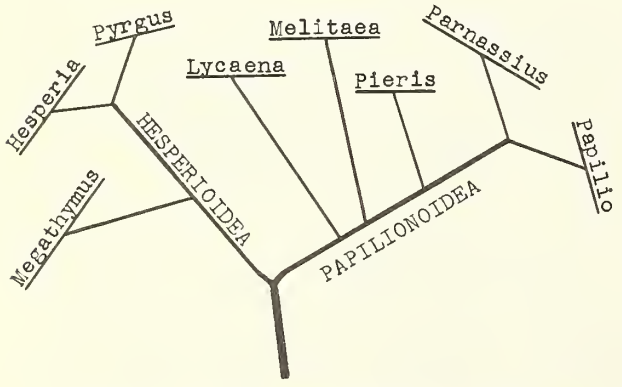
SMITHSONIAN INSTITUTION
SEP 15 1949
NATIONAL MUSEUM

PRINCIPLES OF TAXONOMY - II.

Taxonomy was produced, perhaps parthenogenetically, by Carl von Linné. For a long time it expanded as a rather shapeless mass, or as a mass varying in shape from classifier to classifier. Each early worker acknowledged the biblical premise that Diety had created all the species at once as outlined in Genesis, and each worker believed himself the author of a new filing system of species arrangement, which was admittedly arbitrary. In the beginning of the 19th Century there began to appear in biological writings a hint that species had undergone many changes, probably in response to the environment, and were not placed on earth in complete and final form. This idea developed slowly until it took a sudden leap to rational reality in the 1850's through the brilliant work of Charles Darwin.

Without himself being a taxonomist, Darwin took the varying mass of the body of taxonomy and miraculously gave it a clear, true form by presenting it with a skeleton -- phylogeny. The principle of organic evolution made possible what we call a "natural classification". The term "phylogeny" is from the Greek (phylon- a tribe, and genos- descent) and refers to the ancestry, or family tree, of organisms. The basic assumption is that all living entities, whether plant or animal, descended from one ancestor. Presumably this ancestor was very simple in structure and gave rise to two main lines, the plants and animals, and these lines in turn subdivided many times, giving us the multitude of different groups of plants and animals existing today, as well as many now extinct.

The reason we call our system a "natural" classification is that we believe it expresses true ancestral relationships. For example, Parnassius is included in the same family with Papilio because there is reason to believe they both descended from the same ancestor, an ancestor which Pieris, Melitaea, Lycaena, and others did not share. Similarly, all these 5 genera are included in one superfamily because it is believed that they all descended from one progenitor which was not the ancestor of Hesperia, Pyrgus, and Megathymus.



This is a simple example of a "phylogenetic tree", or chart of ancestry, illustrating the preceding discussion.

C.L.R.

DEFINITIONS OF TERMS

Several NEWS readers have requested that we give definitions of technical words commonly encountered in writings on Lepidoptera. The following apply to Lepidoptera and not necessarily to any other group.

(1) Ovum. Usually used to refer to a fully-formed fertilized egg after oviposition. May also mean the unfertilized germ cell in the ovary of the female.(Plural- ova.)
(2) Larva. The caterpillar, or grub, stage during which most growth and feeding occur. Strictly used, this is the stage following emergence from the egg and preceding pupation in insects with complete metamorphosis. (Plural- larvae.)
(3) Pupa. The "resting"stage between the larval and adult stages, during which the adult is formed. May be enclosed in a cocoon in some Lepidoptera, or naked. (Plural- pupae.)
(4) Chrysalis. Usually the pupa of butterflies, only. (Plural- chrysalides.)
(5) Imago. The adult, sexually mature stage, having functional wings in all but a few Lepidoptera. (Plural- imagines[preferred], or imagoes; adjective- imaginal.)
(6) Ecdysis. Moulting (shedding) the skin. (Plural- ecdyses; adjective- ecdysial.)
(7) Exuviae. The moulted skin of the larva. Never used in the singular.
(8) Eclosion. Emergence of the imago from the pupal skin or of the larva from the ovum.
(9) Instar. The period between two ecdyses. The first instar is the stage following emergence from the egg and preceding the first ecdysis. The second instar is the stage between the first and second ecdyses. The last instar is between pupation and the preceding ecdysis.
(10) Stadium. Essentially synonymous with instar. (Plural- stadia.)
(11) Oviposition. The process of laying eggs.
(12) Hibernation. The dormant state during which the insects live through seasonal low temperatures (winter) at a very low metabolic rate.
(13) Aestivation. The dormant state during which the insects live through seasonal high temperatures or excessive dryness (summer) at a very low metabolic rate.
(14) Primaries. The fore (mesothoracic)wings.
(15) Secondaries. The hind(metathoracic)wings.
(16) Genitalia. All the special structures at the posterior end of the abdomen directly concerned with copulation.
(17) Sympatric. Species which are sympatric occur together, at least in the same locality, if not in the same stage of life history.
(18) Allopatric. Species which are allopatric occupy separate ranges.
(19) Dichromatism (sexual, seasonal, etc.). The occurrence of different coloration in a species. For example, Papilio glaucus, with dark females in the South, has sexual dichromatism; Zerene caesonia, with pink on the underside in autumn, has seasonal dichromatism; all species with races have geographical (or ecological) dichromatism in varying degrees.

ECOLOGICAL RACES IN LEPIDOPTERA

by Sergius G. Kiriakoff

Zoological Laboratories
University of Ghent, Belgium

There has been some discussion these last years about biological races in animals, and their existence has been sometimes questioned. But even Dr. Ernst Mayr, the leading champion of geographical speciation and subspeciation, has admitted that at least certain forms in certain groups were unquestionable biological races. I think that most animal groups possess such races. However, as we have to consider here only the Lepidoptera, I must restrict the discussion to the latter, but would point out that the question is a general one and must be accepted as such, at least as far as the nomenclature is concerned. Another remark is that I consider the term "ecological races" as much more appropriate because the existence of such races is conditioned by local environmental factors (eco-factors). The very nature of these factors is the reason for the relatively low frequency of ecological races as compared with that of geographical races. As, on the other hand, very little is known of the genetical side of the problem and still less of the effectiveness of any reproductive isolation which could exist, I am quite prepared to admit that some of the considered forms are "already" good species and some others are possibly temporary and precarious. From the taxonomical point of view, however, we must consider all of them as ecological races and treat them as such.

Three examples chosen among the European Lepidoptera will illustrate the point:

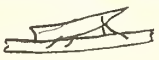
1. Coleophora inulae Wocke and linosyridella Fuchs (Scythrididae). The two forms are almost indistinguishable, but their larvae have different foodplants.

2. Leioptilus carphodactylus Hübner and buphthalmi Hofmann (Pterophoridae). The imagines are identical, but the larvae are somewhat different and live on different plants.

3. Argyroploca andereggana Guenée and rebeliana Mittelberger (Tortricidae). There are some slight color differences; both are alpine, but live at different altitudes.

There is, however, another point of great importance. An ecological race, called to existence by strictly local environmental factors, is very naturally apt to thrive wherever the same factors are to be found. To take one of the above examples, Leioptilus carphodactylus OE. buphthalmi is expected to breed wherever its foodplant Buphthalmum grows, at least when other conditions are favorable. In other words, one may reasonably expect to observe it in several or many separated areas. I am inclined to consider this point as one of the most important, as it gives the ecological race its distinctiveness as a taxonomic unit. For, in my opinion, a geographical race is distinguished by its attachment to a single given geographical or even microgeographical region. If a form is recognized as a geographical race characteristic of a given region, and if an identical form is (later) found in another region, unconnected with the former, perhaps, even remote, this last form has no right to be considered as belonging to the previously recognized race. It is another, a "new" race, and must accordingly receive a name of its own. I know at least one instance of this kind in birds, which cannot be discussed here.

A very similar case has been described by Hovanitz 1940 ("Ecological Color Variation in a Butterfly and the Problem of 'Protective Coloration'", ECOLOGY 21: 371-380), although he has not discussed the taxonomic aspect of the question. Two races of Oeneis chryxus Doubleday & Hewitson, viz. ivallda Mead and stanislaus Hovanitz, have been described, the first very pale, the other dark, with an identical habitat in the Sierra Nevada of California and western Nevada, but localized in several micro-regions, the light form being found in the northernmost and in the southernmost parts of the range of distribution, the dark one occupying the intermediate region. Intergrading areas seem also to be present. After a very interesting discussion of the origin of these races, Hovanitz shows that the color differences between them are due to the color of the soil, or rather that of the rocks covering it. White granite forms most of the landscape in the regions inhabited by ivallda, and dark volcanic rocks or andesite are predominant in the area occupied by stanislaus. This fact alone would be sufficient, in my opinion, to grant the discussed forms the status of ecological races, but the "one geographical region, one geographical race" criterion mentioned above makes it impossible, in my eyes, to consider ivallda even as a micro-race. This form occupies, in the region delimited above, two distinct areas about fifty miles apart, the intervening area being inhabited by stanislaus, and the general ecological conditions being practically identical throughout the common range of distribution of the two forms. Those who would deem it necessary to consider these as microgeographical races should at any rate recognize three of the latter. I have no doubt whatever that they quite obviously are ecological races produced exclusively by an unquestionably ecological factor, and would designate them Oeneis chryxus OE. ivallda and OE. stanislaus, according to the scheme proposed in this review (LEPIDOPTERISTS' NEWS 2: 15, 1948; see also page 16).



G. H. French.

Photo U.S. Bur. Ent. & Pl. Quar.

BRIEF BIOGRAPHIES

12. George Hazen French (1841-1935)

George Hazen French was born in Tully, New York, 19 March 1841. There he attended the Courtlandville Academy, and, at the age of twenty years, was teaching in the grade schools of New York. At the end of the Civil War he decided to go west. Through some relatives in Illinois he learned of an opening as principal of the schools at Belvidere, Ill. Accepting this position he found, upon his arrival, that he had drawn about the toughest school in the state, seven previous principals having resigned within three years on account of the terrifying behavior of some of the students. French, however, coped with the situation by making friends with the boys and succeeded in holding the position for several years. He was married in 1872 but had no children.

A few years later he removed to Grand Rapids, Michigan, but after a brief stay returned to Illinois to teach school at Roscoe. He then decided to try for a degree from the Illinois State Agricultural College at Irvington. Upon passing the examinations he was offered a position as teacher of chemistry in the college, a position which he held for nine years. In 1877 he was appointed assistant to Cyrus Thomas, who was at that time State Entomologist of Illinois. In this same year Prof. French published his first paper, on the Hessian fly, in the Prairie Farmer. Thereafter he was a frequent contributor to the leading agricultural magazines and papers. In 1878 he contributed an article to the 7th Report of the State Entomologist of Illinois and in 1881 he wrote articles on the wheat-straw worm and the cotton worm for the Eleventh Report. Thomas was the first state entomologist to publish articles under the name of his assistants.

In 1878 French obtained a position on the faculty of the Southern Illinois State Normal University at Carbondale, Illinois, where he taught natural history for the next 39 years. During this time he contributed taxonomic articles on insects, chiefly the Lepidoptera, to the leading entomological journals. In these articles he described and named some 37 species of butterflies and moths. Some of the better known among these were as follows: Neonympha mitchellii, Apantesis oithona rectilinea, C. robinsoni curvata, C. lacrymosa evelina and zelica, Tolype distincta, and Camptylochila forbesi.

Later in life Prof. French became interested in pathology and histology and in 1898 he published a "Manual of Dissection and Histology". In 1922 he resigned his position on the faculty of the Southern Illinois State Normal School to accept a position as consultant in pathology and endocrinology in a hospital at Herrin, Illinois, where he had a better opportunity for continuing his researches in this field.

In 1926 Prof. French was struck by an automobile on the streets of Herrin and sustained a fracture of his left leg. Although being past 85 years of age at that time, he made a remarkable recovery. A few years later he was occupied with writing a treatise on endocrinology, but failing eyesight and the infirmities of age prevented him from completing this task. He died at Carbondale, Illinois, 1 January 1935, at the age of 94 years.

Prof. French was the author of at least 236 articles pertaining to many branches of science. A large number of them are of popular interest and of an educational value to the farmer and truck gardener. His book, "Butterflies of the Eastern United States", passed through four editions, the last appearing in 1914.

Edwin P. Meiners, M.D.

NOTICE TO COLEOPTERISTS

All NEWS readers interested also in beetles are urged to subscribe to the Coleopterists' Bulletin. The price for the 10 issues for 1948 is only $1.25. Remittance should be addressed to the editor: Ross H. Arnett, Jr., The Sherwood Press, Dryden, N.Y. The NEWS editors are pleased to congratulate Mr. Arnett on his fine publication.

Recent word from veteran California Lepidopterist R.F. Sternitzky: "We have just bought an Auto Court on the Redwood Empire Highway #101 in Northern California where we will be in the future. If any of the Entomologists happen along this way, we shall be glad to see that they have proper attention by dropping us a line in advance. This territory is practically virgin to collectors. Both my wife and I will give them a cheery welcome." Note his new address on page 48.

CRITICS AND CRITICISMS

by Cyril F. dos Passos
Mendham, New Jersey

THE LEPIDOPTERISTS' NEWS is now well along in its second year. One section of the NEWS consists of a review of current entomological literature. To many readers this is the most important section of the NEWS. That is especially so to those who are obliged to keep abreast of everything published in their respective fields. Only one other American entomological publication gives references to the current literature, and that only by authors, titles, and citations. The NEWS goes much further, furnishing not only the foregoing information but also a condensed statement of the substance of each paper cited, and usually a short critical review of its contents.

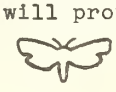
No one, and least of all no one with a scientific frame of mind, can dispute the value and importance of fair and impartial criticism. The progress of scientific investigation is involved in the study of facts and the drawing of proper conclusions thereform. Unfortunately, not all conclusions are correctly drawn, due sometimes to insufficient facts or to an imperfect understanding of them. That is just where the critic comes in. He points out the errors, if any, and if he is correct the subject matter is studied further and different conclusions reached, frequently from a larger number of facts. Or perhaps the critic destroys the soundness of the premises upon which the conclusions have been based and the whole matter is abandoned. It is not believed that the value of criticisms need be stressed any further. Its importance to the student and to the author criticized is so immense that it must be apparent to everyone.

Thus far we have been assuming capable criticisms without considering the critic. Obviously we cannot enjoy the former without an able, conscientious critic. This brings us to the consideration of a critic's qualifications. In the field in which the readers of the NEWS are interested, it is important in the first place that the reviewer be a good entomologist-- not necessarily an expert lepidopterist. Naturally he must be a lepidopterist also, since that is the special field in which we are particularly interested, but if the choice of a critic were to be between a general entomologist knowing but little about Lepidoptera, and a good lepidopterist knowing but little about general entomology, the former would be the better choice. A wide knowledge of an entire subject is better than a thorough acquaintance with one of its component parts.

Criticisms are of two kinds-- constructive and destructive. The former call attention to errors and offer facts supporting the allegations. Constructive criticisms also suggest ways in which a paper could have been written better. Destructive criticisms consist usually of mere conclusions to the effect that this or that is incorrect or not so, without giving any facts in support of such assertions. The trained entomologist is not fooled by the latter class of criticisms. He understands that the critic either does not know his subject thoroughly, or has not taken the necessary time and pains to investigate the matter he undertakes to criticize. On the other hand, such criticisms when made by one who is well known are usually of great danger to the neophyte. He is dazzled by the name and reputation of the critic, and lacks the necessary knowledge and training to look behind his words.

The next point to consider is the proper subjects of criticisms. Naturally a critic cannot devote much space to compliments. The good parts of a paper are self-evident. The mistakes and errors must be detected and pointed out, so that they may not be repeated, and in order to warn the unsuspecting readers against them. The reviewer of taxonomic papers, after giving the substance of a paper, should criticize in a friendly manner such matters as: (a) obvious misdeterminations and suggest how they could have been avoided; (b) proposing names of doubtful validity, either because of the paucity of the material upon which they were based or the fact that they were proposed for aberrations, seasonal forms, etc.; (c) retention of types in private collections which is undoubtedly a serious matter, not only because a type is much safer in a museum but because a type is actually public property and should be placed where it is accessible to students; (d) lack of information concerning the whereabouts of a type in violation of the Appendix to the Rules; (e) briefness or other insufficiency in original descriptions; and (f) improper fixation of a type locality, constructively suggesting one believed to be better. All of these matters are perfectly proper subjects of criticisms concerning which no author has the slightest right to complain, and with which the majority of the readers will readily agree.

On the other hand, the reviewer should avoid all trivialities. What a saving of space and time would result if such a practice were universally followed! Also, the reviewer should omit all conclusions that are unsupported by any evidence. Matters requiring a discussion of facts and the conclusions to be drawn therefrom are best left to a later taxonomic paper where they may be examined in greater detail, the evidence weighed on both sides of the question, and the original author's work shown to be correct or erroneous. The reviewer cannot be expected to please every author in every particular every time he writes a review, but if his criticisms are read as they should be written, with an open mind and a sincere desire for improvement, they will prove of real value.



WINTER BUTTERFLIES IN CALIFORNIA.- Because of the warm weather during January, Lycaenopsis pseudargiolus echo flew every day, except one, the only cloudy day during that month. An unusually cold February, with only one light rain, was not favorable for collecting; however, occasionally the sun shone warm enough for Incisalia iroides, Papilio rutulus, and P. eurymedon to fly. Evidently the dry weather affected the emergence of Anthocharis sara reakirtii, for they were later than ever before. All these observations were made in La Tuna Canyon at an elevation of 1200 feet in the Verdugo Mountains of Los Angeles County.

Here is a tabulation of the earliest dates on which four of our common spring species were observed in flight in La Tuna Canyon over a period of nine years:

	'40	'41	'42	'43
Incisalia iroides	2/9	2/25	1/19	2/28
Papilio eurymedon	3/5	2/25	2/19	2/28
Papilio rutulus	3/6	3/5	2/8	2/28
Anthocharis sara	2/16	2/4	2/1	2/7

	'44	'45	'46	'47	'48
iroides	3/5	2/11	2/26	1/20	1/14
eurymedon	3/5	2/10	3/2	1/9	1/31
rutulus	3/5	1/28	2/23	1/24	1/31
sara	2/6	1/28	1/27	1/20	2/24

- William H. Evans, Roscoe, Calif.

Donald J. Lennox of Whitefield, New Hampshire, reports the opening of the collecting season there (Mar.30) with several good catches of Eupsilias and Graptolithas on sap lines. " E. devia was especially common on Mar. 26th and in wonderful condition."

MORE NOTES ON CALIFORNIA WINTER LEPIDOPTERA.- Our now famous Southern California drought has not been conducive to exceptional collecting this season although we've had success with a few of the rare species. Mr. Smith, Mr. Sala, and myself took a Trichocerapoda that we are unable to place - also Pleroma cinerea. We have been attempting to relocate Lathosea dammersi, as the type locality is now pretty well under cultivation. Adults were taken south of Temecula about a month ago, so this last weekend we headed for that locality to look for larvae. En route we discovered a nice colony of larvae on the east slope of the Cavarin Hills feeding on Ericameria palmeri Gray. The Annaphilas in this area are just beginning to emerge -- a group that still eludes life history observations. We continued to San Felipe with poor results. Returning through Coachella Valley we found a narrow strip of desert that had received rainfall --the annuals here being in full bloom-- and we had good success collecting by light. The species taken included Protoqyqia polingi, Schinia niveicosta and many others.

- 9 March 1948. C. Henne.

Dr. Wm. Hovanitz will be working in Alberta, the Yukon, and Alaska during the coming summer, continuing his studies of the biology of Colias.

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FINE LITERATURE AVAILABLE

The Entomological Society of Washington has prepared for sale several sets of the Lepidoptera papers of which they have a stock of separates. This provides a rare opportunity for Lepidopterists who are not in scientific institutions to obtain a valuable set of important reference material.

The set contains about 80 papers, with a total of approximately 500 pages and 34 plates. About 50 papers are by Harrison G. Dyar, 15 by August Busck, and a few by De Gryse, Ely, Grossbeck, Heinrich, Hooker, Hubbard, Pearsall, John B. Smith and F.M. Webster. Some of the more important papers are: the 1903 paper on Clemens' types of Tineina and the 1914 paper on the classification of the Microlepidoptera by Busck; descriptions of the larvae of 50 North American Noctuidae (1899) and notes on Notodontidae in the U.S. National Museum (1908) by Dyar; Ely's venational revision of the North American Gracilariidae (1917); and Smith's revision of the Boreal American spp. of Nonagria (1903). Dr. A.B. Gurney, secretary of the Society, writes: "For the serious student who wishes to assemble Dyar's numerous short papers, the set should be particularly helpful."

The set is for sale for $12.75. After an exchange of correspondence with Dr. Gurney an agreement was reached whereby Lep. Soc. members may purchase the set at a 20% reduction, making the total cost $10.20, postpaid in the U.S.A. and Canada. This is a very substantial reduction from the original quotation, and we hope all members specializing in North American moths will avail themselves of this offer.

Orders should be addressed to:

Entomological Society of Washington
c/o Bureau of Entomology & Plant Quarantine
Washington 25, D.C.

Be sure to mention your membership in the Lep. Soc. if you wish the discount.

C.L.R.

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Professor Kenneth J. Hayward, noted specialist in Neotropical Hesperiidae, is now chief of the Institute of Entomology at the National University of Tucuman, Argentina. He is engaged in writing a complete seven volume monograph of the Argentine Rhopalocera. It is large folio and is being illustrated fully in color. The first two volumes are being printed now, and are enthusiastically awaited here.

Jose Rollin de la Torre Bueno, editor of the Bulletin of the Brooklyn Entomological Society and Entomologica Americana, passed away at his home in Tucson, Arizona, on 3 May 1948, at the age of 76 years. Mr. Bueno was not a lepidopterist, but he contributed significantly to the entire field of entomology through his editorships and the revised edition of "A Glossary of Entomology", of which he was the author. We valued him highly as a personal friend and feel deep regret at his passing.

Charles & Jeanne Remington

BOOK REVIEWS

8. "THE NATURAL HISTORY OF THE RARER LEPIDOPTEROUS INSECTS OF GEORGIA, including their Systematic Characters, the Particulars of their Several Metamorphoses, and the Plants on which they feed. Collected from the Observations of Mr.John Abbot, many years resident in that Country." by James Edward Smith.

Insect collecting as a recreation increased in popularity during the 18th century. A number of large collections were formed and illustrated books on the subject began to make their appearance. Exotic insects sent to London from England's far reaching maritime possessions helped to maintain this interest and soon a market for such objects was created. Several collectors found it profitable to deal in insects supplying their fellow collectors with their duplicates.

One such dealer in insect specimens who flourished in London some time after 1790, was John Francillon, a silversmith in the Strand. Francillon, himself, had formed a remarkable collection of insects, chiefly butterflies and moths. Among the unusual things which he offered for sale were many fine specimens from the "Province of Georgia", in North America, which he offered at very reasonable prices. Besides specimens of insect life he also sold some wonderful water color drawings of insects in all of their stages of metamorphoses with their principal food plants. Francillon was somewhat secretive concerning the origin of these specimens and drawings, but a few of his customers knew that the name of the correspondent from whom they were obtained was John Abbot.

Among those who purchased drawings from Francillon was Sir James Edward Smith, who was primarily a botanist and the author of several works on plants. He was the possessor of the library and collections of the great Linnaeus. Besides this he was also one of the founders of the Linnean Society of London. Smith not only appreciated the beauty of the drawings but recognized that these were the first illustrations to depict the early stages of the insects of North America and,therefore, were a real contribution to science. He consequently set about to have certain of these drawings, showing the butterflies and moths, their caterpillars and food plants,published.

The engraving of the plates, and presumably the coloring, was done by one, John Harris (not Moses Harris as stated by some authors). The authorship of the work is credited by recent workers to Abbot and Smith jointly, although it is known that Abbot knew nothing about the publication until years after its appearance. Smith made the determinations and supplied the scientific names.

The work consists of two large folio volumes containing 104 colored plates illustrating as many species of butterflies and moths, together with their food plants, larvae and chrysalids or pupae. In many instances both sexes of the adult insect are depicted and sometimes the larvae are shown in several instars. These plates are reproductions of the original water color drawings made by John Abbot from specimens which he reared and studied. The method of reproducing these illustrations was first to engrave the outlines of the insects and plants on copper plates. Impressions made from these plates were then filled in with color by hand, faithfully copying the original, a method which was both slow and tedious and involved a great deal of expense. A comparable method today would make the cost of a similar work prohibitive to all but the very wealthy. In a copy before the writer the colors of the plates, 150 years after its publication, remain as bright and vivid as at the time of its issuance.

The text is written in both English and French. The scientific and English names of the insects depicted are given together with both scientific and common names of the food plant. Following this is a brief observation by Abbot concerning the habits of the caterpillar,time of appearance,etc. To this Smith has added further observations, usually of a taxonomic nature. The original Linnean generic names are used. The specific names are frequently archaic ones now considered synonyms. Occasionally specific names used illustrate the difficulty entomologists had even at that time in interpreting the Linnean descriptions. Thus, Plate 1 depicts the butterfly, Papilio ajax (P. asterias of older lists) under the name Papilio troilus.

All in all it is a sumptuous work characteristic of fine book printing of its day. It is printed on an excellent grade of heavy, hand made paper, but the large type used, the wide spacing, the liberal margins, as well as the sparcity of figures on the plates would be considered a needless expense today. Aside from its historical interest its chief value lies in the numerous original descriptions contained therein. It is one of the great rarities in the literature of North American entomology.

Edwin P. Meiners

This is an appropriate point to emphasize the fact, noted above by Dr. Meiners, that Abbot knew nothing of the publication of this book for some years after its appearance and obviously was not an author of it. Smith gives him proper credit in the title. Smith, alone, is responsible for all taxonomic material therein contained, and there is no valid reason for crediting new names to "Abbot & Smith". W.H. Edwards' great book on butterflies contained many pages of field notes quoted directly from David Bruce. The plates were drawn by Mary Peart. However, no references list the authorship as Edwards, Bruce, and Peart. The same reasoning applies to "Abbot & Smith". In future references the following species should be listed as:Achalarus lycidas (J.E.Smith), Thorybes bathyllus (J.E.Smith), Sphinx kalmiae J.E.Smith, Apantesis placentia (J.E.Smith), Isia isabella (J.E.Smith), Acronicta hastulifera (J.E.Smith), Catocala neogama (J.E.Smith), and others. John B. Smith has named many allied species, so it is necessary to give both initials.

C.L.R.

RECENT LITERATURE ON LEPIDOPTERA

Under this heading are listed each month recent papers from all the scientific journals, from any part of the world, which are accessible to us through the library of the Museum of Comparative Zoology at Harvard University. Members in countries outside North America are urged to send us references of Lepidoptera papers from journals unavailable to us. Reprints from all members are solicited. Papers devoted entirely to economic aspects, such as insecticides or accounts of damage to human property, will be omitted.

129. Beatty, Harry A., "The Insects of St. Croix, V.I." Journ.Agric.Univ.Puerto Rico, vol.28: pp.114-172. "July-Oct.1944"(1945 or later). Lepidoptera list on pp.156-163, with dates for 42 butterflies, 45 macro-, 37 micro-moths. Most determinations by Capps, Clarke, Field, Forbes, Heinrich.

130. Bryk, Felix, "Neue ostasiatische Aegeriiden (Lep.)." (In German). Opuscula Entomologica (Sweden), vol.12: pp.96-109, figs. 1-11. 30 June 1947. Describes as new the genera: Kemneriella, Leptocimbicina, Entrichella, Rectala, Caudicornia, Paranthrenina, and the species: K. malaiseorum(Burma), L. aurivena(China), E. pogonias(China), R.asyliformis(China), Caud. xanthopimpla(Burma), Paranthrenina iridina(China) and myrmekomorpha(Burma), Paranthrene pompilus(China), Chimaerosphecia colochelyna, Conopia armigera and subtillima(Burma). Poor photo of type of each n.sp. except E. pogonias. Descriptions seem very difficult to use, comparisons being almost completely lacking. Genitalia not studied. Manuscript apparently hastily assembled, since iridina is listed as Paranthrenina on figure and obviously mistakenly as Paranthrene in text. Also, myrmekomorpha is so spelled in text twice and as myrmecomorpha on figure (correct translation from Greek should be"c",not"k").

131. Bryk, Felix, "Catopta brandti m., eine neue Cosside aus Persien. (Lep. Cossidae)." (In German). Opuscula Entomologica(Sweden), vol.12:pp.173-174. 31 Dec.1947. Describes C. brandti(Iran) as new, from 2 ♂♂. Lists Newelskoia Gr.-Gr. as synonym of Catopta Staud., the latter having slight priority.

132. Chermock, F.H. and D.P. Frechin, "A New Speyeria from Washington." Pan-Pacific Ent., vol.23: pp.111-112. July 1947. S. cybele pugetensis (Belfair, Wash.) described as a new race: A melano-suffused population west of the Cascade range in Oregon and Washington. This new name has added prestige in the apparent support of L.P. Grey. A paratype series of 400 specimens is the most extreme point of the flourishing paratype trade we have seen recently and reminds us, by contrast, of a widely-held professional view that the only paratypes having any significance are topotypes.

133. Christoffersson, Harry, "Limenitis camilla L. funnen i Skåne." (In Swedish). Opuscula Entomologica (Sweden), vol.11: p. 172, fig. 21 Dec.1946.

134. Coles, H.J., "Spring Flight of Nymphalis californica near Nelson, B.C. (Lepidoptera: Nymphalidae)." Proc.Ent.Soc.Brit.Columbia, vol.44:p.34. 16 Feb.1948. More on spring migration in B.C. (see Downes, below).

135. Comstock, John Adams, "Notes on the Early Stages of Adelocephala heiligbrodti f. hubbardi Dyar." Bull. So. Calif. Acad. Sci., vol.46: pp.72-77, pls.16,17. 8 Feb. 1948. Detailed description and beautiful figures of 1st and last instar larvae and pupa reared on Mesquite (Prosopis) from eggs from Santa Rita Mts., Arizona.

136. Couchman, L.E., "Note on Hesperilla chrysotricha plebeia Waterhouse (Lepidoptera-Hesperiidae)." Pap. & Proc. Roy. Soc. Tasmania, 1946: pp.29-30, 1 pl. 15 Oct. 1947. Very rare Tasmanian skipper found breeding on Gahnia trifida. Sev. taken in very local spot. Neallotype ♀ described. Fine photos of both sexes.

137. dos Passos, Cyril F., "The Eye Colors of Some Colias Collected in New Jersey." Proc. Ent.Soc.Wash. 50: pp.35-38. 27 Feb. 1948. Of 96 Colias eurytheme-philodice, 51 had black eyes and the other 45 the usual yellow-green eyes. Such a condition never before having been reported, it will be desirable for collectors to note the eye color on all living Colias collected and prepare statistics on this character in other places to compare with the New Jersey record. The question is whether this black eye color is hereditary.

138. Downes, W., "The Hibernation of Nymphalis californica (Bdv.), the California Tortoise-shell Butterfly; a Query." Proc.Ent. Soc.Brit.Columbia, vol.44: p.34. 16 Feb. 1948. Observed very large northeasterly flight on Vancouver Is. May 11, 1946. Suggests californica breeds on mainland, flies to Vancouver Is. to hibernate, returns to mainland to breed in spring.

139. Eriksson, Gunnar, "Gotländska fynd av Calymnia diffinis under åren 1942-1945." (In Swedish). Opuscula Entomologica (Sweden), vol.11: pp.171-172, fig. 21 Dec.1946.

140. Foxlee, Harold R., "Second Supplement to a List of the Heterocera of the Nelson-Robson-Trail District of British Columbia (Lepidoptera)." Proc.Ent.Soc.Brit.Columbia, vol.44: p.39. 16 Feb. 1948. Adds 6 new records.

141. Fukushima, Ichio, "Noctuidae of Micronesia (Lepidoptera)." Mushi (Japan), vol.18: pp.1-22, pls.1-3. 25 Sept. 1947. Lists the 35 previously recorded spp. Then gives new notes and records of 63 spp., 37 new for Micronesia, none new to science. Hypeninae and some Noctuinae omitted until later paper. Photos of 12 spp. Detailed bibliography. Collection at Kyushu University.

142. Guppy, Richard, "Some Notes on the Habits of Arzama obliqua on Vancouver Island. (Lepidoptera:Phalaenidae." Proc.Ent.Soc. Brit.Columbia, vol.44: pp.17-18. 16 Feb. 1948. Detailed account of life history. Found B.C. larvae burrowing in stems of skunk cabbage (Lysichiton), and pupating under bark of dead trees.

143. Herbulot, C., "Captures de Geometridae dans la région parisienne." (In French). Rev. franç. Lépid., vol.11: pp.15-18. 23 June 1947. Notes on 7 spp.

144. Judd, W.W., "Acentropus niveus Olivier (Lepidoptera: Pyralidae) at Hamilton, Ontario." Canadian Ent., vol.79: p.119. "June, 1947" (1948). Over 75 taken June 14-July 19.

RECENT LITERATURE (cont.)

145. Kiriakoff, S.G., "Le Cline, une nouvelle catégorie systématique intraspécifique." Bull. & Ann. Soc. Ent. Belgique, vol.83: pp. 130-140. 1947. Develops Huxley's "cline" concept in relation to Lepidoptera,with Parnassius phoebus as the example.

146. Lalanne, - , "Deux nouvelles formes de Heodes gordius Sulz." (In French). Rev. franç. Lépid., vol.11: pp.24-27. 23 June 1947. New race occidentalis from S. France and an aberration phlaeoides of the new race.

147. Legrand, H., "Symmoca cryptogamorum Mill. (Gelechiidae) Description de deux formes inédites." (In French). Rev. franç. Lépid., vol.11: pp.1-10, fig.1, pl.1. 23 June 1947. Careful discussion of taxonomic aspects of the species, but names 2 new forms which are not races as treated, and thus seem properly unnameable. Fine photos.

148. McGuffin, W.C., "New Descriptions of Larvae of Forest Insects: Semiothisa, Dysmigia (Lepidoptera, Geometridae)." Canadian Ent., vol.79: pp.113-116. "June, 1947" (1948). Describes carefully larvae of S. sexmaculata (host - Larix) and D. loricaria (host - Populus & Salix), noting green and brown phases of each.

149. Mukerji,Durgadas & Basanta Kumar Behura, "On the Biology of Danaus chrysippus (Linnaeus) and its Parasites." Journ. Bombay Nat. Hist. Soc., vol.47: pp.111-114. Aug. 1947. Detailed notes. Host- Calotropis gigantea. 2 spp. of flies and 1 of chalcid wasps reared as parasites.

150. Munroe, Eugene G., "Further North American Records of Acentropus niveus (Lepidoptera, Pyralidae)." Canadian Ent., vol.79: p.120. "June, 1947" (1948). Gives records from New York and 2 counties in Quebec. Believes this European species is also native to N.Am., not an introduction.

151. Nordström, Frithiof, "För svenska faunan nya fjärilar jämte några andra." (In Swedish). Opuscula Entomologica (Sweden), vol. 12: pp.159-172, 21 figs., map. 31 Dec.1947. Notes on sev. spp. of butterflies and moths in Sweden, with special emphasis on host plants. Rather good photos of 18 spp. of moths. Extensive reference list.

152. Palm, Nils-Bertil, "Microlepidoptera,Neuroptera, and Trichoptera from Medelpad and Norrbotten, Sweden. With descriptions of some new Tineid species." Opuscula Entomologica(Sweden), vol.12: pp.35-49, figs.1-3. 30 June 1947. Describes as new: Phthorimaea atralbella, Kemnerella, Coleophora digitella(Norrbotten) and Lithocolletis irmella, Bryotropha fusconigratella(Medelpad), all from uniques. Figures genitalia of above and P. marmorea, Blabophanes spilotella and wing of n.spp. (except B. fusconigratella) and P. kiningerella, B. spilotella. Records numerous Pyralids, Tortricids, Tineids from the two counties.

153. Palm, Nils-Bertil, "Cucullia praecana Ev. funnen i Norrbotten (Lep. Noctuidae)." (In Swedish). Opusc. Ent., vol.12: p.84. 30 June 1947.

154. Russo, G., "Un nuovo Piralide:Mabra russoi Schaus dannesa alla canna da zucchero nella Repubblica Dominicana (Antille)." (In Italian). Riv.Biol.Colon. (Rome), vol. 3: pp.139-144, 2 figs. 1940. Larva,pupa, adults described - pest of Dominican Republic sugar cane, mining stalks,bud,eating leaves. Said to be named by Schaus but this needs verification. If not true, the embarrassing situation of a describer naming a species after himself results.

155. Sevastopulo, D.G., "The Early Stages of Indian Lepidoptera." Journ. Bombay Nat. Hist. Soc., vol.47: pp.26-43. Aug. 1947. Continuation of long series. Gives notes on 2 Rhopalocera, 1 Grypocera, 35 Heterocera.

156. Travassos F°, Lauro, "Notas de Nomenclatura. I. Estado Atual dos Gêneros Methysia Butler, 1876, e Metamya, Novo Nome para Paramya Druce, 1898 (Lep.: Ctenuchidae)." (In Portuguese). Papéis Avulsos Dept.Zool.Sec. Agr.Brasil, vol.7: pp.257-265. 12 Dec.1946. Paramya Druce(= Paramya Hampson), a homonym of a mollusc name,replaced by Metamya Travassos (type:- Paramya picta Druce). Gives synonymy of Methysia and Metamya and of the 4 spp. in each. Detailed references.

157. Travassos F°, Lauro, "Redesdrição de Pericopis picta (Guérin, 1944)(Lepidoptera Pericopidae), Estudo de Suas Fases Cromáticas e Dados Bionômicos." (In Portuguese). Arquiv. Zool. São Paulo, vol.5: pp.483-537. 17 pls.(2 col.). 14 Nov. 1947. Redescription of P. picta with account of color phases and biology. Species highly sexually dichromatic, the ♂ proving to be P. lucifer. P. indecisa also falls as synonym-- one of many ♀ forms. ♂♂ nocturnal, ♀♀ prob. diurnal. Hosts are Compositae. Color plates of ♂ and 5 ♀ forms. A superb paper!

158. Warren, B.C.S., "Some Principles of Classification in Lepidoptera, with Special Reference to the Butterflies." The Entomologist, vol.80: pp.208-217, 235-241, 262-268, 280-282. Sept.-Dec. 1947. For summary of first two parts, see LEP.NEWS I: 74. The final two parts continue the persuasive argument for brief, absolute characterizations of categories above species. Also heavily stressed is the value of genitalic definition, with the dos Passos & Grey work on Speyeria used as a fine example. Warren states: "In spite of much prejudice against this use of the genitalia, there is no denying the advantages. One clearly is that the characters are almost always of a definite nature, and leave no uncertainty as to what species do, or do not, come under the resulting definition. Ambiguity is ruled out. ... From the work I have done I have no doubt that unmistakable generic characters exist in all families, and only require to be looked for." It is unfortunate that Warren ignores or discounts the possible contribution of larval characters to support classification, perhaps because they are so little studied for systematic purposes. The door also seems closed to contributions from cytology, genetics, and physiology.

159. Wind, Robert G., "A New Subspecies of Melitea." Pan-Pacific Ent., vol.23: p. 171. Oct.1947. Describes as new M. leanira daviesi (Calif.). Types in Calif. Acad. Sci. No new names in American Melitea or Euphydryas can be very significant until long-needed generic revisions are published.

NOMENCLATURE NOTES

Since the publication of the comprehensive check-list of the Lepidoptera of America north of Mexico in 1938-39, by Dr. J. McDunnough, there have been numerous changes in nomenclature accompanying advancing knowledge. The most recent have been presented in the Recent Literature section of the NEWS. From time to time other important changes will be brought to the attention of NEWS readers. While the present list almost entirely concerns North America, we hope to extend the scope in the future. A number of these changes are presented below.

Dryas julia, not Colaenis julia. See Michener, 1942, Am.Mus.Nov.No.1197: p.4. Dryas Hübn. has 12 years priority and becomes the necessary name as a result of Hemming's (1934) designation of julia as the genotype. Michener removes euchroia Dbldy., telesiphe Hew., and phaetusa L. to new genera.

Agraulis vanillae, not Dione vanillae. See Michener, ibid.: p.5. Agraulis Bdv.& Lec. separated from Dione as monotypic genus on basis of venation, antennae, claws, and ♂ genitalia.

Agraulis vanillae incarnata (Riley) for specimens from Mexico, Calif., Ariz., N.Mex., Texas. A. vanillae nigrior Mich. for specimens from Bermuda, Florida, Ga., Ala., Miss., La., Carolinas, etc. See Michener, 1942, Am.Mus.Nov. No.1215: pp.6-7. Specimens from Mo., N.Y., Wash., etc. should be checked as to subspecies, since they or their parents are migrants and do not overwinter in these more northern states. Typical vanillae is from northern South America and adjacent localities on the north. The name comstocki Gund., as Michener shows, is applicable only to the dark aberration and does not enter into priority status in nomenclature.

Libytheana bachmanii & carinenta, not Libythea bachmanii & carinenta. See Michener, 1943, Am.Mus.Nov. No.1232: p.1. Libytheana Mich. erected for all American Libytheidae. As Scudder showed long ago, the New World and Old World species are very different. Libythea is now applicable only to Old World Snout Butterflies.

Speyeria, not Argynnis, for all New World species. See LEP.NEWS, vol.2: p.5.

Limenitis bredowii, not Heterochroa bredowii. See Carpenter & Hobby, 1944, Trans.Roy.Soc. Lond., vol.94: pp.315-322. Heterochroa is a preoccupied name and can never be used here. The species bredowii is considered as a Limenitis (= Basilarchia), but Lepidopterists who know this species and its larva in the field must question such lumping. Specimens from Tex., N.Mex., Ariz., Colo., Kans., are race eulalia; material from Calif., Ore., Nev., Utah is race californica. Typical bredowii is in southern Mexico.

CTENUCHIDAE Kirby, not EUCHROMIIDAE, SYNTOMIDAE or AMATIDAE. See Travassos, 1935, Mem. Inst.Oswaldo Cruz, vol.30: pp.437-451, and later papers. Syntomis is a synonym of Amata, as is Glaucopis Hübn., since the latter name is a homonym of a bird genus. The name Ctenuchidae has long priority over Euchromiidae or Amatidae.

L.P. Grey has kindly provided us with the following information on the "Argynnis"-"Brenthis" group, much of it published by dos Passos & Grey, 1945, Am.Mus.Nov. No.1296:1-28.

Subfamily ARGYNNINAE. Distinguished from all other subfamilies of Nymphalidae by the unique "open" (membranous) area of the tegumen of the ♂ genitalia.

Tribe ARGYNNIDI. All species have a basally (proximally) open aedeagus(of the ♂ genitalia). Contains the following genera:

1. Brenthis Hübner. Entirely Palearctic. Note that this genus is not even in same tribe as the American Bog Fritillaries (Boloria, etc.)
2. Yramea Reuss. Andes of South America.
3. Issoria Hübner. Palearctic & African.
4. Speyeria Scudder. North American.
5. Fabriciana Reuss. A large strictly Palearctic genus.
6. Mesoacidalia Reuss. Entirely Palearctic (Europe & Asia).
7. Damora Nordmann. Entirely Palearctic.
8. Argynnis Fabricius. (Type - paphia L.) Scopoli's Argyreus has 30 years' priority over Argynnis, but was set aside by the International Commission in Opinion 11. Entirely European & Asiatic!
9. Pandoriana Warren. Entirely Palearctic.
10. Childrena Hemming. Himalayan.
11. Argyreus Scopoli. Himalayan & Indo-Australian.
12. Argyronome Hübner. Palearctic.

Tribe BOLORIIDI. All species have a basally closed aedeagus. Uncus uniformly bifid. Contains the following genera:

1. Boloria Moore. (Type - pales Schiff.) Holarctic (Europe, Asia, N.America). This is the name now applied to all the North American "Brenthis". Actually most of its species will probably be placed in the following two genera, and perhaps more. New revisional studies are badly needed.

2. Proclossiana Reuss. (Type - eunomia Esp.) Holarctic. The species generally called"aphirape" belongs here; the correct name is eunomia.

3. Clossiana Reuss. (Type - selene Schiff.) Holarctic. All American "Brenthis" except pales and eunomia (= aphirape) belong here, but Grey is certain that it is an unnatural assemblage and must be broken up. The "myrina" group is the same species as selene of Europe and must be so listed. The name "bellona" is a homonym and cannot be used for the North American species,which thus takes the next name- toddi. The American races formerly referred to charicles are actually rossicus. Thus we must write them as: Clossiana rossicus montinus, C. rossicus helena, C.rossicus rainieri,etc.

C.L.R.

NOTICES BY MEMBERS

Members are invited to contribute any notices to this column. There is no cost for this service. Unless withdrawn sooner by the member, notices will appear 3 consecutive times.

BELGIAN CONGO BUTTERFLIES. About 40 named spp. available. Desire in exchange North American Papilionidae (incl. Parnassius) and Pieridae, in papers. S.G. Kiriakoff, 14 Universiteitsstraat, Ghent, BELGIUM.

EXOTIC AND LOCAL LEPIDOPTERA & INSECTA- Buy and sell. Exchange in some genera. I have contacts in remote regions in various countries. Will supply material for specialists or artwork or for general collections and museums by arrangement. R.F. Sternitzky, Star Route, Laytonville, Mendocino Co., Calif.

Will exchange up to 300 Ward's insect pins size No.1, for equal quantity of No.3, Ward's or European pins of comparable quality. Richard Guppy, R.R.1,Marine Drive,Wellington,B.C.

M.E.Janmoulle, 2 rue Ernotte, Watermael, BELGIUM, will be pleased to help Lep.Soc. members obtain Belgian Microlepidoptera on an exchange basis.

WANTED: Tingidae ("Lace Bugs") of world in alcohol. Give name of plant host and as much other ecological detail as possible. Will collect in exchange any local Lepidoptera (or other insects) you specify. N.S. Bailey, 16 Neponset Ave., Hyde Park 36, Mass.

WANTED: Papilionidae from any part of the world. Best prices paid for rare species. Robert G. Wind,Rt.1, Box 145, Livermore, Cal.

PHALAENIDAE (Noctuidae), NOTODONTIDAE, SPHINGIDAE of U.S. & Canada wanted in exchange for these families of New Jersey Pine Barrens area. Will collect in limited numbers in these and other families of Lepidoptera for exchange or sale. Correspondence invited. J.W. Cadbury 3rd, Spung Hollow, R.D.# 1, Pemberton, N.J.

Would like to correspond with collectors interested in Speyeria and Saturniidae. Have good exchange for these,needed for my collection. E.J.Frederick, 5508 E.Gage, Bell,Calif.

FOR SALE: Boloria, Oeneis, & Erebia from the Far North. R.J. Fitch, Rivercourse P.O. via Lloydminster, Saskatchewan, CANADA.

"TRANSPAR MOUNTS": The material for starting a collection in Transpar Mounts is available in the "Transpar Mount Butterfly Collection Kit". This contains 116 mounts of all sizes, five display panels and tools; price $32.50. Additional packages of mounts and individual display panels can be ordered separately. Further information on request. Otto Ackermann, 639 Walnut Street, Irwin, Pa.

BRAZIL MACROLEPIDOPTERA offered in exchange for North American Papilios and Saturniidae. Will gladly collect Noctuidae and Geometridae for exchange. H.R. Pearson, Postal Box 5151, Rio de Janeiro, D.F., BRAZIL.

BUTTERFLIES & MOTHS OF THE HIGH ALPS - All Lepidoptera of the Austrian Tyrol offered. Special rarities are species such as Colias palaeno, Argynnis thore, Erebia glacialis & epiphron, Orodemnias quenselii, Plusia spp. Prices according to Staudinger & Bang-Haas List. Send list now of species desired. Some material on hand. Extensive collecting planned for the coming season.
Dr. H. Wilcke, Kössen/Tyrol, Nr.199, AUSTRIA.

Mr. Heinz Jensen, 54 Hyltebjerg Alle,Vanlose, Copenhagen, DENMARK, wishes correspondence with U.S.A. Lepidopterists, especially in the Southeast. He is willing to collect any Scandinavian Lepidoptera and is interested in exchanging books and journals on Lepidoptera.

Can offer Callosamia angulifera, Citheronia regalis, etc. for uncommon Sphingidae and Catocala needed for my collection. A very large set of duplicates of commoner Lepidoptera available in exchange for commoner species from elsewhere. C.W. Baker, P.O. Box 455, Waynesburg, Ohio.

RHOPALOCERA AND ZYGAENIDAE OF SOUTHERN FRANCE offered in exchange for North American Rhopalocera, Zygaenidae (including Procris = Ino), etc. Write in English. F. Dujardin, 25 rue Guiglia, Nice (A.M.), FRANCE.

FOR SALE- One of largest remaining private collections of Palearctic Macrolepidoptera, containing more than 66,000 specimens in about 10,000 determined species and forms, including 1,374 holo-, allo- and co-types. From all parts of Europe & Asia. Material mounted in 122 drawers & some other boxes. "No shipping difficulties will be encountered." Also for sale is a reprint library on Lepidoptera containing 1400 papers. For detailed lists of the collection and library, write: Dr. H. Bytinski-Salz, 16 Lassalle Street, Tel Aviv, PALESTINE.

LIVING MATERIAL AVAILABLE

The NEWS will welcome especially notices concerning the exchange or sale of Lepidoptera eggs, larvae, and pupae, hoping to revive the old interest in rearing and to re-emphasize the importance of studying the immature stages. Contributors are urged to include accurate locality data with all material sent.

Eggs of Catocala herodias (food-plants Quercus nana and some other oaks)- While available, will give some to those interested in rearing. Would appreciate eggs of any Catocala which feed on Crataegus or other rare Catocala with food-plants available in N.Y. City area. If none now, can you obtain eggs of Crataegus (Hawthorn)feeders this coming season? S.A. Hessel, 8 Woodmere Blvd., Woodmere, L.I., N.Y.

LIVING PUPAE CATOCALA AMESTRIS & C. ILLECTA available, May only. Also undetermined pupae from Crataegus or Quercus. L.H. Bridwell, Box 44, Forestburg, Texas.

Supplement to the BOARD OF SPECIALISTS:

AFRICA: Lycaenidae.....H. Stempffer
Lab. d'Entomologie du Museum
45 bis, rue de Buffon
Paris (5e), FRANCE

(See p.10 for the rest of the Board.)

Professor F.M. Carpenter informs us that he has recently learned, from an apparently dependable source, that virtually the entire collection of fossil insects embedded in Baltic Amber, at the museum in Königsberg, East Prussia, was destroyed when that city was severely bombed during the recent war.

We have learned with regret of the passing, on 29 December 1947, of Dr. A. Jefferis Turner. Dr. Turner was the dean of Australian Lepidopterists. He specialized in the lower moths. His conception of the classification of the Lepidoptera, based on his lifelong studies, was published near the time of his passing and will be summarized in an early issue of the NEWS. Dr. Turner was presented with a gift membership in the Lep.Soc., but the notification did not reach Australia until after his death.

Rudolf Kümmert of Germany has sent an appeal for rearing material, especially of Saturniidae. He states that newly laid eggs sent by airmail will be received before hatching. He requests species whose foodplants are in Germany: Callosamia angulifera,promethea,Platysamia euryale,cecropia,Samia walkeri,Eacles imperialis, Automeris io, Actias luna, Telea polyphemus, Citheronia regalis. Herr Kümmert will send German material in exchange if possible. Members who correspond in German should write him at:(10b) Wurzen/Sachsen, Dresdnerstrasse 44, Deutschland/Russische Zone.

Mr. dos Passos has kindly provided us with several copies of his paper on Colias eye colors (see Recent Lit.). These will be sent, while they last, to Lep.Soc. members who send a request to the Lep.Soc. office. Members in the U.S.A. please send 5¢ postage. Those who investigate this eye color question in their own regions are invited to send results to the NEWS.

A member of the Lepidopterists' Society who has collected extensively throughout New England, the Southeast, the Sierras, Rockies, Tetons, and Alaska, now wishes to dispose of an entire collection of butterflies in order to devote full time and cabinet space to research on moths. This member wishes to present the collection to a Lepidopterist who needs material for serious taxonomic research. All specimens are mounted and carefully labeled. Persons interested in obtaining this study collection should write to the NEWS editor.

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NEW MEMBERS BEFORE MARCH 25th

Adler, Julius, 407 Oak St., Grand Forks, N.D.
Bock, Theodore, 70 Ehrman Ave., Cincinnati 20, Ohio.
Buxbaum, Paul, 360 Central Park West, New York 25, N.Y.
Cadbury, John W., 3rd, Spung Hollow, R.D. 1, Pemberton, New Jersey.
Candidus, Edward S., 1846 New York Ave., Brooklyn 10, N.Y.
Cross, Frank C., 9413 Second Ave., Silver Spring, Md.
French, E.W., Beta Phi Fraternity, Rhode Island State College, Kingston, R.I.
Jensen, Heinz, Hyltebjerg Alle 54, Vanlose, Copenhagen, DENMARK.
Kostreva, Samuel, Jr., 317 E. Boulder St., Colorado Springs, Colo.
McCabe, D.T., 58 Thackeray Rd., Wellesley Hills 82, Mass.
Miller, H.C., 222 N. Collingwood Ave., Syracuse 6, N.Y.
Newman, J.E., Woodlawn, Carroll County, Va.
Ramos, J.A., Biol. Dept., College of Agric. & Mech.Arts, Mayaguez, PUERTO RICO.
Riesland, LeRoy G., 111 Warner St., Sedro Woolley, Wash.
Schryver, C.D. 4561 Wolff St., Denver, Colo.
Torre y Callejas, Dr. S.L. de la, Playa 75 1/2, Matanzas, CUBA.

* * *

CHANGES OF ADDRESS: Beebe, Ralph, 4169 Tenth St., Ecorse 29, Mich.
Sternitzky, R.F., Monte Vista Cabins, Star Rt., Laytonville, Mendocino Co., Calif.

* * *

DECEASED: Dr. A.J. Turner, AUSTRALIA.

THE LEPIDOPTERISTS' NEWS is the monthly periodical of The Lepidopterists' Society. Membership is open to anyone interested in the study of butterflies & moths. The 1948 dues, including subscription to the NEWS, are $1.50 for Regular Members and $3.00 or more for Sustaining Members. Please make remittances payable to : Charles L. Remington.
Address all Society correspondence to: P.O. Box 104, Cambridge 38, Mass., U.S.A.

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The Lepidopterists' News

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Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

Volume II May 1948 Number 5

A REPORT ON THE WAR DAMAGE TO LEPIDOPTEROLOGY IN EUROPE

by Sergius G. Kiriakoff
Zoological Laboratories
University of Ghent, Belgium

The editor of the NEWS has asked me to give a short account of war losses in Europe with reference to lepidopterists killed or deceased during the hostilities, damage to or loss of public or private collections, etc. As everyone knows, present conditions in Europe are by no means normal. The whole eastern portion of the Continent is cut off from the rest of the world by the Iron Curtain, and even in the remaining parts of Europe communications are not always easy and it is difficult to get sufficient data.

The study of the Lepidoptera has always been particularly well-developed in Germany, and German lepidopterists, professional as well as amateur, have, even in the last prewar years, outnumbered those of the other European countries, with the possible exception of the British Isles. As Germany has suffered very heavily during the war, it is of particular importance to know the extent of her losses with regard to Lepidopterology. I have asked Dr.W. Forster, of the Bavarian State Zoological Collections, Munich, to give such information as he could gather. This first part of my report comprises the information Dr. Forster has kindly sent me. I thank him very much indeed and I know that the readers of the NEWS will feel grateful to him for this information, the first of its kind, as far as I am aware, since the end of the war. A report of war losses to science in Germany has appeared in NATURE for 1946, but without special reference to Lepidoptera.

1.- LEPIDOPTERISTS KILLED OR DECEASED.- Killed in action: Wilhelm Koehler, Munich. Deceased (no further details are given; some may have been killed in air raids): Dr. h.c. Fr. Phillipps, Cologne; Dr. Schawerda, Vienna; Dr. Kurt von Rosen, Munich; J. Röber, Dresden; Dr. H. Zerny, Vienna; Dr. Przegendza, Nürenberg; Dr. H. Duerck, Munich; Prof. Dr. von Stubenrauch, Munich; H. Freiherr von der Goltz, Coblenz; Colonel von Bartha, Budapest, Hungary; Willy Schultze, Toelz (formerly of Manila, Philippine Is.); Dr. C. Bosch, Heidelberg; Dr. von Sterneck, Carlsbad; Dr. Kremky, Warsaw, Poland. This list includes such authorities as Röber, Zerny,and Von der Goltz.

2.- COLLECTIONS DAMAGED OR DESTROYED.- Completely lost: Those in the Museums of Hamburg, of Stettin and of Augsburg. Partially lost: That of Dresden Museum. The following very important collections have been preserved from destruction, entirely or for the greater part: Koenig Museum, Bonn; Senckenberg Museum, Frankfurt; Vienna Museum and Linz Museum, Austria; the Deutsches Entomologisches Institut, Berlin-Dalhem; Museums of Munich, Stuttgart and Berlin. The premises of the last four institutions have been wholly or partially destroyed. Fortunately, the collections were carried to safety in time to escape destruction.

Among the private collections, most have not suffered any damage owing to the measures of precaution which have been taken by the owners. Dr. Forster tells me that he knows of two of the larger private collections that have been completely lost: viz. those of Phillipps, Cologne, and of Draudt, Darmstadt; in addition, the Prack collection, Frankfurt, has been very badly damaged.

I am writing to another German lepidopterist whose address has been kindly supplied by Dr. Forster, and hope to be able to report later on some further data, especially on what regards the Russian zone. The report on losses suffered by the West European countries will be sent in later.

Dr. Forster writes me that although a very important and valuable portion of the German collections has been saved, there still is great danger threatening further damage or even destruction: there is no equipment such as boxes and cabinets, no preserving means; and as a result of the urgent economy measures there are mostly only skeleton staffs present. Besides, many of the premises are heavily damaged without means of repair. As an example, the Bavarian State Museum, Munich, needs at least 10,000 insect boxes along with the corresponding cabinets and there is no hope whatever for a solution, as financial possibilities are nil. Most of the cabinets, says Dr. Forster, have been destroyed by fire, as is the case with many other museums. The only hope of the German lepidopterists rests with foreign aid. If I may make a plea, I think, that for science's sake, a campaign should be launched among the American universities, to try to save what can be saved. It is my earnest hope that this appeal shall not remain unanswered.

SMITHSONIAN INSTITUTION
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NATIONAL MUSEUM

PRINCIPLES OF TAXONOMY - III.

After the new impetus to taxonomic biology resulting from Darwin's explanation of evolution in the 1850's there remained a need for an understanding of the mechanism of the inheritance of physical characters, before the full explanation of the evolutionary process was possible. Early workers wrote that the germ plasm of the individual was modified by the environment and that this modification was fixed and was passed on to the offspring. For example, a dark Catocala living in white birch surroundings would become slightly lighter and transfer the paleness to its offspring, which would, in turn, become slightly paler, and so on until a white species would result after numerous generations.

Gregor Mendel, a monk, was probably the first to discover some of the basic principles of heredity now known as the science of GENETICS. However, Mendel's work is only of historical interest, since he published his results in such an obscure way that the discoveries were made independently and almost simultaneously by three outstanding biologists who immediately placed their work before the field, some time before Mendel's unknown papers were found. These real fathers of genetics were De Vries, Correns, and von Tschermak. Even these men did not reveal the physical site of hereditary events. It was T.H. Morgan and his students who showed that the hereditary units ("genes") are located in structures known as chromosomes occurring in the nucleus of all the living cells of the body and that slight changes ("mutations") in one of these genes will change the physical character controlled by that gene. For example, one gene controls the presence of the white ground-color so common in females of the genus Colias. If a stray X-ray strikes the gene in a dividing sex cell of an adult yellow ♀ Colias, it may modify that gene so that some or all of the ♀ offspring of the X-rayed ♀ will be white females.

However, most of these gene mutations are not so radical. Instead, with the dark Catocala moving to a birch region, a mutation will appear giving a few more white scales on the wings. Even a slight paleness will give some protection from enemies, so that the paler individuals survive and have offspring more often than the darker moths. This process continuing for very many generations eventually produces whiteness in the species. It is generally accepted among biologists that the mutation for paleness is merely a random accident and that others for redness, blackness, etc. occur just as often but are discriminated against by "Natural Selection", since these do not contribute to a better chance for survival. Modern geneticists believe that evolution is the result of an accumulation of these beneficial "micromutations" and that a species divides when different populations become separated by barriers so that interbreeding ceases and then each population goes its own diverging, random way in changing according to its environment.

C.L.R.

DEFINITIONS OF COMMON LATIN TERMS

Lepidopterists who use taxonomic literature regularly encounter many latin expressions which have become the specific shorthand for certain meanings in papers in all languages. In continuation of our series of brief aids to the untrained worker, we present here, with definitions, some common terms.

1. species nova (sing.) The designation to be placed immediately after the name given in the original paper for a previously undescribed(unnamed) species. Correctly abbreviated sp.nov. or sp.n. (not n.sp.)
2. genus novum (sing.). The designation for a new genus, abbreviated gen.nov.
3. nomen novum. The designation for a new name for a previously described (named) species, genus, etc., usually used when the former name is found to be a homonym; often abbreviated nom.nov. or n.n.
4. nomen nudum. A specific name without a recognizable original description or a generic name without an included species which can be type. (nom.nud.)
5. nomen conservandum. A name, which would fall into synonymy according to the Law of Priority, but which has become universally used and whose abandonment would cause too great confusion, may be preserved by a ruling of the International Commission on Zoological Nomenclature and receives this designation. (plural - nomina conservanda)
6. nomen inquirendum. "Questionable name"; a name whose status is uncertain.
7. auctorum. Literally, "of authors"; a term used following a specific or generic name to designate previous usage (not believed correct) of that name. (Nearly always written auct.)
8. lapsus calami. Literally, a "slip of the pen"; refers to an accidental misspelling, especially of a scientific name. It has been claimed that modern usage should be "lapsus digiti"("slip of the finger"),since modern manuscripts are typed, but this view does unnecessary violence to a firmly established, universally understood term.
9. in statu nascendi. "In the state of being born"; referred to a species which is so close to its fellow species as to be considered either a race or a distinct species, the decision being arbitrary; the assumption is that it is becoming distinct.
10. emendatus. "Amended"; placed after a name when the original spelling has been corrected. (emend.)
11. sensu lato. "In the broad sense"; example- Papilio sens.lat. would mean the broadest current interpretation of the genus (see below). (s.lat., s.l.)
12. sensu stricto. "In the narrow sense"; example- Papilio sens.strict. (or s.strict., s.s.) would mean the restricted group of species of the genus, not Battus, Iphiclides, or other genera separated by "splitting" authors.
13. ex-ovo. "From egg"; reared from the egg.
14. ex-larva. "From larva"; reared from a larva.
15. ex-pupa. "From pupa"; reared from the pupa. These three expressions should be used on the labels of reared specimens.

C.L.R.

NOTES ON THE GENUS EUREMA (PIERIDAE) IN THE UNITED STATES

by Alexander B. Klots
College of the City of New York

Eurema is one of the more imperfectly known of our butterfly genera, as a result of which misidentifications and misapprehensions are particularly rife concerning many of the species. In part this stems from several errors made by Holland in the Butterfly Book; some arises from the as yet little understood relationships of the forms in the jucunda - daira complex; and one widely followed error in the nomenclature must be attributed to the present writer.

The purpose of this short paper is twofold. First, it may help to clarify some of the puzzling points; and second it may, by pointing out some of the major gaps in our knowledge, stimulate work to fill those gaps. In this respect the writer would like to enter a plea for the loan of study material and for information. Ever since his revision of the Eurema of the New World in 1929 (Entomologica Americana Vol. IX (n.ser.) pp.99-171, 4 pl.) he has maintained a particular interest in this genus. He hopes to be able some day to prepare a thoroughgoing revision of at least the North American species.

Eurema mexicana (Boisduval) presents no major problems. We need more data about the northern and western limits of its range. I have taken it in southern Wyoming, and in central Colorado at 10,000 ft. breeding and well established in the Canadian Zone. There is some ground for suspicion that the North American population constitutes a valid, though not very distinct race. Life history work is needed.

Eurema proterpia (Fabricius) occurs widely in southern Arizona. I have a few Texas records, but none from New Mexico. It is well known from Cuba and Mexico, so that it may well occur along the Texas gulf coast and in Florida. There is a suspicion that proterpia and the next species, gundlachia, may really be conspecific. Life history work is needed.

Eurema gundlachia (Poey) occurs in Arizona, as well as in Mexico and Cuba. Perhaps it will be found in New Mexico, Texas and the Southeast. Holland (Butterfly Book) figured a ♂ gundlachia (Pl. LXXIII, fig.25) and a ♀ as longicauda Bates (Pl. XXXVII, fig.25), a synonymous name. Life history work needed.

Eurema salome limoneus (Felder) figured by Holland (Pl.XXXVII, fig.9-10) as E. damaris (Felder) is the Mexican race of a widespread and common tropical species. I have seen specimens labelled "Texas" but none with trustworthy data. There is one apparently authentic record from Garces, Ariz., June. It may occur widely along our southern border. Any life history data would be extremely valuable.

Eurema boisduvaliana (Felder) figured by Klots, 1929 (loc.cit. Pl.II, fig.51-52), not uncommon in Mexico and known from Cuba, is known to occur sparingly in Florida, Texas and Arizona. The writer would like to study all available specimens. Life history data are very badly needed.

Eurema nicippe (Cramer) is a well known, widely distributed species which presents no special problems, although more detailed life history data are needed. Some noticeable aberrations are known, such as the yellow one ("flava") that has been confused with E. boisduvaliana. A fairly frequent variation has the underside of the hindwing brown to red-brown.

Eurema lisa (Boisduval & Leconte), like nicippe, presents no special problems, although much detailed work remains to be done on the life history and the number and variation of the broods in various localities.

Eurema nise nelphe (Felder) has frequently been misidentified and misnamed. It is figured as E. nise perimede Prittwitz in Klots, 1929 (Pl.IV, fig.93-94). The name perimede was there unfortunately applied to this race of nise by a misprint, so that this name. which is really based on South American specimens and is not at all applicable here, has crept into the literature. Edwards gave the name linda to specimens of this species taken in Mexico near the Arizona border. Unless the contrary can be demonstrated by good series of specimens we should use the racial name nelphe, based on Mexican specimens, for our North American nise, with linda as a synonym. This species has been frequently misidentified as lisa; and I have seen females misnamed jucunda. It is well established in southern Florida where at least three, and possibly four, broods occur annually. Life history work is badly needed. I would like the opportunity of studying all specimens.

Eurema dina westwoodi (Boisduval), figured by Holland (Pl.XXXVI, fig.11) is supposed to occur in the United States. Since it is a common species in Mexico this is not unlikely. I have not, however, seen authentic specimens. The nymotypical race, E. dina dina (Poey) is Antillean; this might occur in Florida.

Eurema messalina (Fabricius), figured in Klots, 1929 (Pl.II, fig.41-42) is a small, white species common in Cuba and the Bahamas. It has been recorded from Florida on the basis of an old record of Maynard's from Sanford, Oct. 1, 1887, and of some specimens of very dubious authenticity labelled "Chokoloskee" by a dealer. Unless some absolutely authentic North American records turn up the species should be dropped from the North American list. Blakei (Maynard) applies to a Bahaman race. Gnathene (Boisduval) and gnatheme auct. are synonyms of messalina.

Eurema daira (Godart) [delia (Cramer)] and jucunda (Boisduval & Leconte) are the chief United States members of a complex which presents an extremely puzzling situation. In-

volved are also the Antillean E. palmyra (Poey) and the Central American E. lydia(Felder) which resembled jucunda in being white or very lightly marked beneath but have the hind wings of the male and both wings of the female white above; and the Antillean E. ebriola (Poey) and the Central American E. eugenia (Wallengren) which resemble daira in being marked or tinted with brown or reddish underneath but, like palmyra and lydia, have the hind wings of the male and both wings of the female white above. In some localities(chiefly southward) one finds nearly every possible intergradation and combination of these characters in such a way as to show that there can be no definite species lines. In other localities (chiefly northward) the jucunda and daira "types" appear to keep quite consistently separate. Haskin (Ent. News, 1933, vol.44, p.121) published the results of some rearing work in Auburndale, Fla. This strongly suggests the likelihood of jucunda being a hot season form and daira a cold season form of the same species. Specimens intermediate between them in season showed a high percentage of intergrading in appearance. This idea is borne out by field observations of my own in central Florida, and by the study of large series of specimens from the United States, Cuba and Central America. However, we cannot be even reasonably sure of anything until someone, preferably in Florida, rears adequate series of these forms from known parents under natural seasonal conditions; and, if possible, carries out controlled breeding experiments. Such work will be of the greatest general biological as well as entomological value. Northern records are needed in both the Eastern coastal plain and the interior.

Eurema palmyra (Poey) [or E. lydia (Felder)], mentioned above as members of the daira - jucunda complex, occurs in a limited area in southern Florida. I have seen only a few specimens, not enough to determine the exact affinities. These forms are figured in Klots, 1929, Pl.1, fig.11-13. More material for study is badly needed; so are life history data.

Eurema elathea (Cramer) was recorded by Holland as occurring in "Florida, Mexico and the Antilles". However, the specimen figured by Holland (Butterfly Book, Pl.XXXVII, fig.12) as elathea is really E. ebriola (Poey) as the grey, not black, bar on the fore wing unmistakably shows. I have never seen an authentic North American elathea; nor have I ever seen an authentic North American specimen of either ebriola or of the closely related eugenia (Wallengren) of Central America. Apparently Holland not only had a specimen with inaccurate data but also figured it under the wrong name.

For the convenience of students a short key to the "barred" forms follows. Be it reiterated that this must be used with caution. No attempt has been made in it to evaluate the specific or subspecific status of the forms.

1. Males; usually with clear cut, dark bar along inner margin of fore wing above.....2

1. Females; usually without this bar, or with the bar diffuse.....12

2. Bar deep grey, usually wide.....3

2. Bar true black, usually narrower....elathea

3. Both fore and hind wings above yellow.....4

3. Hind wings above white.....9

4. Marginal border of hind wings above largely confined to an apical patch.....5

4. Marginal border of hind wings above extending broadly well below apical patch, sometimes solid to anal angle.....7

5. Hind wings beneath brown to brick red-brown, thoroughly dusted with fuscous scales.....daira

5. Hind wings beneath whitish, yellowish or light pinkish-brown.....6

6. Hind wings beneath whitish or yellowish-white, sometimes considerably dusted with fuscous scales....."delioides"

6. Hind wings light pinkish or brownish-tinged below; mostly in autumn broods in U.S.A.; dominant in Mexico.....cepio

7. Hind wings beneath pearly white, more or less lightly dusted with fuscous scaling..8

7. Hind wings beneath white heavily dusted with fuscous scales, or light brownish or pinkish-brown. Intermediate forms to daira; most common in spring and autumn broods in southern Florida and Mexico, rare northward.

8. Marginal borders of wings very wide; Mexico.....sidonia

8. Marginal borders of wings narrower; Mexico and southern U.S.A. .....jucunda

9. Marginal border of hind wings above largely confined to an apical patch; hind wings beneath typically brown or brownish-red.....10

9. Marginal border of hind wings above extending well beyond apical patch, sometimes solid to anal angle; hind wings beneath typically white or yellowish-white.....11

KLOTS: NOTES ON EUREMA (cont.)

10. Antillean; bar and border of fore wing and apical patch of hind wing above narrower.....ebriola

10. Mainland; bar and border of fore wing and apical patch of hind wing above wider.....eugenia

11. Antillean; bar and border of fore wing and border of hind wing above narrower.....palmyra

11. Mainland; bar and border of fore wing and border of hind wing above wider.....lydia

12. Females not keyed out in detail, too much information being lacking. In general, females follow the same pattern lines as the respective males. Two important exceptions are:

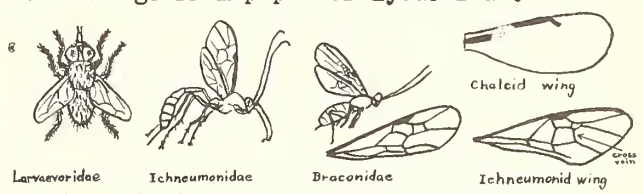
a. In ebriola, eugenia, palmyra and lydia, the forms with yellow fore wings and white hind wings in the males, the females have both pairs of wings white above.

b. In daira, jucunda, etc., the forms with both fore and hind wings yellow in the males, the females are typically similarly unicolorous. Some jucunda females, however, may have both fore and hind wings white above, or have fore wings yellow and hind wings white above, or have fore wings white and hind wings yellow above. Some daira females may have both fore and hind wings white or yellowish-white above.

In conclusion may I note that the working out of the racial affinities of many of the Eurema, and particularly of the "barred" species, is a very difficult task. At the American Museum are series of hundreds of specimens, including large numbers from many localities in the tropics; yet, even with such material available for comparison we cannot be sure of major points. It is very much to be hoped that workers will refrain from "snap judgments" based on comparatively small series of North American specimens and will, before publishing local lists or similar papers, make sure of the proper identification of their material. It is also hoped that workers will take every precaution to safeguard the accuracy of their data. Many inaccuracies have been recorded in the literature, and very many weary days have been wasted because of specimens from the Antilles, Central and South America that have been labelled "Texas", "Florida", "Chokoloskee, Fla.", etc. I have positive evidence that some of this has been caused by dealers wilfully mislabelling material so as to sell it to collectors. Let us hope that this sort of things will not recur.

DETERMINATION OF PARASITES OF LEPIDOPTERA

The exact identification of parasites is an important aspect of the biology of Lepidoptera. It seems likely that nearly all species are parasitized in some stage of their life cycle. Most insects which parasitize Lepidoptera fall into four groups. The two-winged flies (Diptera) are mostly LARVAEVORIDAE (formerly Tachinidae); the larvaevorids lay enormous numbers of tiny eggs scattered around the food-plant of the host butterfly or moth, those which are eaten with the leaves hatching and attacking the insides of the caterpillar. There are three common parasitic groups of the narrow-waisted four-winged flies (Hymenoptera). The ICHNEUMONIDAE are often very large, sometimes tiny, and have relatively numerous wing veins. The BRACONIDAE are often very small, occasionally large, and differ most obviously in lacking one cross-vein which is present in ichneumon-flies; the common swarms of tiny parasite larvae which emerge and attach white cocoons to sphinx larvae are braconids. The CHALCIDOIDEA are distinctive in being very small (some parasites of eggs are hardly visible) and in having the wing venation almost entirely absent; many chalcids are brilliant iridescent green or blue and some of the largest chalcids, distinctive for huge ("swollen") hind leg bases, often emerge from pupae of Lycaenidae.



There is little value in saving these parasites unless the species of the lepidopteran host is definitely known. If the identity of the parasitized egg, larva, or pupa is known, the parasites should be carefully preserved, with locality, emergence date, and host clearly noted on the label. Medium and large parasites may be mounted on fine insect pins. Tiny species may be kept between layers of cellucotton in pill boxes or match boxes.

At present no authority has been found to identify chalcids reared from Lepidoptera, but for North American specimens of the other groups, identifications will be provided for Lep. Soc. members as follows:

LARVAEVORIDAE.....Curtis W. Sabrosky
ICHNEUMONIDAE.....Henry K. Townes
BRACONIDAE.....C.F.W. Muesebeck

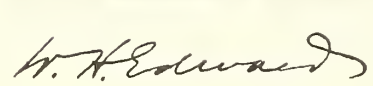
Address for each: Div. of Insect Identification, Bureau of Entomology & Plant Quarantine, c/o U.S. National Museum, Washington 25, D.C.

Members submitting specimens should offer to have the parasites placed in the National Museum collections. The NEWS will publish all new records of parasites reared from Lepidoptera. When extensive material has been accumulated it may be possible to publish separately a systematic list of Lepidoptera and all parasites reared from them.

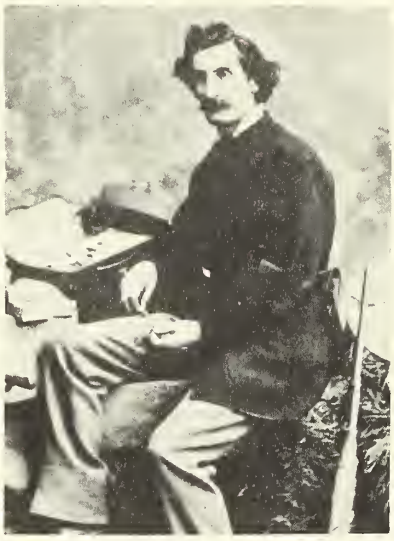
C.L.R.

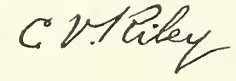
BRIEF BIOGRAPHIES. 13. PORTRAITS.

On this page are portraits of four of the lepidopterists of whom biographical sketches appeared in Vol. I of the NEWS. All of these photographs were previously unpublished. Those of Edwards, Packard, and Riley were kindly loaned by Dr. A.B. Klots of New York. The Scudder portrait is from the files of the Museum of Comparative Zoology in Cambridge.



William Henry Edwards (1822-1909)





Charles Valentine Riley (1843-1895)

Samuel Hubbard Scudder (1837-1911)

Alpheus Spring Packard, Jr. (1839-1905)

BOOK REVIEWS

8. The Butterflies of the Eastern United States by G. H. French*

Previous to the last decade of the nineteenth century the North American lepidopterist had few reference works with which he could identify the specimens in his collection. There were no manuals like Holland's, Comstock's and the many others which we today consider indispensable. He may have had a copy of Emmon's Insects of New York, the miserable plates of which would have helped to identify some of the commoner species. Or, he may have had Harris' Insects Injurious to Vegetation, the third edition of which contained a few illustrations of butterflies and moths.

Prof. French realized the need of a moderately priced manual for the identification of our butterflies. For a number of years he had been using analytical tables of the butterflies of Illinois which he had prepared for the use of his classes. Encouraged by the popular demand for these tables he elaborated upon them and, with additional material, issued them in book form in 1885 under the title "Butterflies of the Eastern United States". The book is a small octavo volume of 408 pages containing some 93 text figures of butterflies or their preparatory stages. The text begins with a brief account of the anatomy and metamorphosis of the butterflies. An "accentuated list of the butterflies of the Eastern United States" shows 201 species recognized as occurring within the territory covered. The "Analytical Key for the Determination of the Butterflies of the Eastern United States", which takes up about 25 pages, is followed by a brief account of the butterflies, their varieties and life histories as far as known. This occupies the balance of the book with the exception of a brief glossary.

Holland said of this book, "It is an admirable little work, with the help of which the student may learn much in relation to the subject; but it greatly lacks in illustration, without which all such publications are not attractive or thoroughly useful to the student". Colored plates, at the time of the first appearance of this book, were produced either by lithography or hand coloring, the expense of which would have detracted from the usefulness of the book at which Prof. French aimed. According to the subtitle the work was published "for the use of classes in zoology and private students". The author undoubtedly expected his students to study their specimens for descriptive characters, which would be of more value than to depend wholly upon comparative likenesses. That this work fulfilled the need of the student of the Lepidoptera for many years is evidenced by the fact that it passed through four editions. It is still worth rescuing from the shelves of the second hand book stores.

Edwin P. Meiners

*1st ed. Philadelphia, 1890; 2nd ed. 414pp. 1896; 3rd ed. 425 pp. 1900; 4th ed. 429 pp. 1914.

NOTES ON COLLECTION & LIBRARY CARE

Dr. E.P. Meiners, for decades one of the most constructive amateur entomologists in America, specializes in Lepidoptera and Coleoptera and the history of entomology. He has a very extensive library and large collection of original letters from great and lesser American entomologists. He recently sent several useful comments on material in the March NEWS, which we are quoting.--

The creosote method of fumigation "was first advocated by Dr. George Bock of St. Louis and you will find it written up in Ent. News Vol. 18, p. 443, 1907. Dr. Bock used thimbles, to which he had soldered short pins so that he could pin them in his boxes, as containers for the creosote. I saw his collection some years ago and thought it looked rather messy since, whenever the fluid spilled out it stained the lining of the trays. . . . . A few years after Bock announced his method the Kny-Scherer Co., who were then one of the foremost suppliers of entomological needs, manufactured a small, globular, glass container into which a strong pin was fused. This had some advantage over the thimbles in that the opening at the top was necessarily smaller than the body of the container and therefore, prevented spilling to some extent. . . . . I always add a little PDB in my relaxing box and am never troubled by mold, even when specimens are left for an unduly long time. Several years ago I had a correspondent who sent me specimens in tight tin containers. These specimens were usually still fresh when sent and not thoroughly dry. The first box I received I found all of the specimens had developed mold. Thereafter, at my request, my correspondent placed a little naphthalene in the box and this never again happened, although the papers were sometimes quite damp. . . . . On the other hand, PDB draws out resin from the wood of some boxes, especially when such wood as cypress is used, causing unsightly staining of the paper lining. Apparently we have not yet found an ideal preservative. . . . .

"Another comment on the preservation of books. As for protecting leather bindings- I usually treat leather bindings once a year or two with a preparation of equal parts of lanolin and neat's foot oil. This should be applied until the leather no longer soaks up the oil and then wiped dry with a clean cloth. Using this method I have brought back a fair degree of pliability to old and dry bindings if there has not been much damage to the leather.

"I like the idea of the exchange of ideas and experiences in the NEWS. The publication can become very valuable in this way. I am sure many collectors have little tricks which they would be glad to share with others. The early numbers of the Bulletin of the Brooklyn Entomological Society were full of such ideas and I think it is too bad that no future journal has followed up this plan. Nearly everyone has his own little trick in baiting, capturing, and preserving his specimens in the field. Also in relaxing, mounting, labelling, etc."

160. An Old Moth Hunter, "The Oak Prominents." Ent.Rec. & Journ. Variation, vol.60: pp.15-19. Feb. 1948. On Drymonia ruficornis.

161. Berjot, E., "Le D.D.T. dans la lutte contre les Anthrènes." (In French). Rev. franç. Lépid., vol.11: pp.62-64. Mar.1947. Mentions that naphthalene and creosote are weak fumigants for collections and paradichlorbenzene is good, but short-lived. Suggests DDT as best protection.

162. Betz, J., "Chasses aux lépidoptères en juin, en Kabylie." (In French). Rev. franç. Lépid., vol.11:pp.53-58. Mar. 1947. Field notes, mostly on butterflies, of Algeria.

163. Boursin, Ch., "La classification du Dr. C. Börner." (In French). Rev.franç.Lépid., vol.11: pp.65-78. Apr. 1947. Summarizes Börner's (1925, 1939, etc.) overall classification of Lepidoptera, with suborders MONOTRYSIA and DITRYSIA, latter with superseries HETEROCERA and RHOPALOCERA.

164. Brown, S.C.S., "Caloptilia Hübn.,a Genus of Tineina." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.157-167, 2 pls. 12 Dec.1947. Descriptions, life history notes, and key to British spp., with fine color plate of 15 of the 16 spp. Gracillaria Haw. and Gracilaria Zell. said to be synonyms of Caloptila Hübn.

165. Bull, G.A., "Notes on Collecting in Kent, 1946." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.168-169. 12 Dec. 1947.

166. Burkhardt, V.R., "Collecting in West Surrey - 1947." Ent. Rec. & Journ. Variation, vol.60: pp.20-21. Feb. 1948.

167. Carpenter, G.D.Hale, "Three Interesting Pseudacraea(Lep.,Nymphalidae)." Ent.Monthly Mag., vol.84: pp.1-2, pl.B. Jan. 1948. Color figures of P. boisduvali sayonis.,P. eurytus victoris, P. ruwen zorica, the latter a copy. Reproduces original description of sayonis. Brief discussion of the mimics and models: Pseudacraea and Acraea.

168. Cockayne, E.A., "Aberrations of British Macrolepidoptera." Ent. Rec. & Journ. Variation, vol.60: pp.9-10. Feb. 1948. 4 moth aberrations very formally named!

169. Corbet, A. Steven, "Papers on Malaysian Rhopalocera. III: The Butterflies of Singapore Island." The Entomologist,vol.81: pp. 9-14, figs.1-6. Jan. 1948. Describes as new: Pratapa deudorix ingeni(Singapore; also Penang & Sumatra). Notes on 31 spp. of butterflies,collected and reared by F.C. van Ingen while a Japanese prisoner of war. Figures ♂ and ♀ genitalia of Pratapa mantra & deudorix. Gives 2 tables of distribution.

170. Corbet, A. Steven, "Papers on Malaysian Rhopalocera: IV. A New Satyrid Butterfly from Malaya." The Entomologist, vol.81: p.37. Feb. 1948. Describes as new race hislopi (N. Kedah) of Ethope diademoides.

171. de Lesse, H., "Contribution a l'étude du genre Erebia." (In French). Rev. franç. Lépid., vol.11: pp.97-118. May 1947. Describes as new: E. epiphron mackeri "race" fauveaui (w. Pyrenees), E. epiphron pyrenaica "race" cebennica (Mt. Aigoual), E. melampus tigranes "race" lioranus (Lioran), E. gorge gorge "race" crollensis (Dent de Crolles). Gives records and notes on others. These "races" would be "microraces" in the usual sense, since a "subspecies" is either a geographical or ecological race (see Kiriakoff, Lep.News 2: 3-4, 15).

172. Esaki, Teiso, "A list of the known gynandromorphs of Japanese, Korean and Formosan butterflies (Third report)." (In Japanese). Zephyrus (Japan), vol.9: pp.231-237, pls. 18, 19. June 1947. Annotated list of 29 specimens, mostly Pieridae. No European language summary. Fine photos of specimens of Papilio bianor dehaani, Everes argiades seitzi, Erynnis montanus.

173. Fremlin, H.S., "Entomological Reminiscences." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.170-172. 12 Dec.1947.

174. Goddard, M.J., "A Mixed Pairing: Colias hyale x Colias croceus ab. pallida." The Entomologist, vol.81: pp.20-21. Jan. 1948. Hyale ♂ and croceus ♀ found copulating and others seen courting.

175. Hackray, J., "Contribution a l'étude de la faune belge." (In French). Rev. franç. Lépid., vol.11:pp.19-24. 23 June 1947. Numerous new records for Belgium, including 5 spp. of butterflies,56 moths(22 Eupithecia!).

176. Haggett, G., "Lepidoptera Taken At Arundel in 1947." The Entomologist, vol.81: pp.30-34. Feb.1948. Very detailed records.

177. Harrison, J.W. Heslop, "The Pleistocene races of certain British insects and distributional overlapping." Ent. Rec. & Journ. Variation, vol.59: pp.141-145. Dec. 1947.

178. Harrison, J.W.Heslop, "Lepidoptera in the Inner and Outer Hebrides during the Year 1947." The Entomologist, vol.81: pp.1-6. Jan. 1948. List & notes of 79 spp.(12 butterflies), representing unusual records.

179. Harrison, J.W. Heslop, "The northern distribution of Pararge aegeria L. (Lep., Satyridae)." Ent. Monthly Mag., vol.84: pp.40-41. Feb. 1948.

180. Haynes, Raymond F., "Some Notes on Observations of the Rhopalocera of Southern Italy (1944-45)." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.151-156. 12 Dec. 1947. Interesting field notes.

181. Hemmingsen, Axel M., "A chrysalis stridulating by means of instrument on inside of cocoon." Ent. Meddelelser, vol.25: pp. 165-173, 4 figs. 15 Nov. 1947. In N.China found the noctuid, Eligma narcissus Cram., making cocoons on twigs. Inside of cocoon has rasp and pupae have "scraper organ" on abdomen. This organ is rubbed on rasp when cocoon is disturbed, as by egg-laying parasite, and rhythmic, clearly audible sound results. Structures figured.

182. Herbulot, C., "Remarques à propos de l'article de Mme et le Dr Loritz intitulé: 'Notes zoogéographiques'." (In French). Rev. franç. Lépid., vol.11: pp.49-53. Mar. 1947. Refutations of Loritz paper, on Catocala fraxini and Brenthis ino.

183. Huggins, H.C., "Variation in British Insects." The Entomologist, vol.81: pp.35-36. Feb. 1948.

184. Ito, Syusiro,"Drei Ypthima-Arten von den Ryūkyū-Inseln (Lepidoptera,Satyridae)." (In Japanese). Zephyrus, vol.9:pp.272-278, pl. 23, 3 figs. June 1947. Describes as new Y. masakii. Gives notes on Y. riukiuana & Y. yayeyamana. Photos of all 3 spp. The lack of any European language description or distribution of masakii is regrettable.

185. Jolivet, Pierre, "Une méthode pratique pour la conservation des Chenilles: le montage à la gélatine." (In French). Rev. franç. Lépid., vol.11: pp.91-94. Apr. 1947. Reviews a method of preserving larvae given by Harry Andison in Canadian Entomologist.

186. King, Harold, "Sex Attractant Principles of Moths." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.106-108. 12 Dec.1947. Reports on work of Haller in U.S.A. and Butenandt in Germany which has proved that sex attractant principle is chemical substance rather than electric or sound waves, that it is one or more of the alcohols and is soluble in fat solvents. An incredibly small amount could be detected by males.

187. Legrand, H., "Une Phycide nouvelle pour la faune française Ephestia moebiusi Rebel. (Crambidae Phycitinae) Mais est-elle réellement nouvelle?" (In French). Rev.franç. Lépid., vol.11:pp.33-49, pl.3, 3 text figs. Mar. 1947. Records E. moebiusi, shows its distinctness from E. elutella and retains it as distinct from E. mistralella. Figures ♂ genitalia of moebiusi and elutella; clear photos of moebiusi and mistralella.

188. Le Marchand, S., "Nouvelle note sur quelques Lithocolletis (Lép. Lithocolletidae)." (In French). Rev. franç. Lépid., vol.11: pp.28-31, 4 figs. 23 June 1947. Gives supplement to his key to French spp.to include 2 n.spp. (of Rebel); corrects former error in key; describes new aberration fractifasciella of L. kleemannella. It is a surprise to find so busy an authority as M. Le Marchand naming aberrations!

189. Lowe, J.H.B., "Collecting Butterflies in India." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.109-114. 12 Dec.1947. Entertaining popular account. A preferred resting spot of famous Leaf Butterfly (Kallima inachus) was on large boulders, where they were conspicuous instead of protected.

190. Manny, J., "Race nouvelle de Zygaena achilleae Esp. en Charente-Maritime." (In French). Rev. franç. Lépid., vol.11:pp.95-96. Apr. 1947. Not given new name; said to be identical with form bitorquata Mon.

191. Morimoto, Tarô, "Note on an aberrant form of Papilio xuthus Linné from Korea." (In Japanese). Zephyrus, vol.9: p.280, 1 fig. June 1947. Recorded and figured, but no new name given.

192. Morley, A.M., "Lepidoptera of Folkestone." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.173-182. 12 Dec. 1947. General notes on various moths and butterflies.

193. Murayama, S., "Eine neue Aberration von Neozephyrus aurorinus Oberthür aus Japan." (In Japanese). Zephyrus, vol.9:p.279, 1 fig. Describes, figures and names(!) aberration.

194. Muspratt, V., "Observations des Migrations en 1946." (In French). Rev. franç. Lépid., vol.11: pp.78-85; 120-127. Apr., May 1947. Author, a leading authority on migration, summarizes for 1946:Pieris brassicae, Leucochloe daplidice, Colias hyale & croceus, Vanessa atalanta & cardui & antiopa, Issoria lathonia, Lampides boeticus, Everes argiades, Laphygma exigua,Phytometra gamma, Herse convolvuli, Macroglossum stellatarum, Celerio euphorbiae, Nemophila noctuella, Plutella maculipennis.

195. Nobel, G., "L'Hespéride Gegenes pumilio Hffsgg." (In French). Rev. franç. Lépid., vol.11:pp.118-120. May 1947. Notes on occurrence in France.

196. Picard, J., "Qu'est-ce que Hesperia caïd Le Cerf?" (In French). Rev. franç. Lépid., vol.11: pp.61-62. Mar. 1947. Places caïd as a (spring) form of Muschampia mohammed.

197. Picard, J., "Nouvelles notes sur Pyrgus (Scelotrix) cacaliae Rbr." (In French). Rev. franç. Lépid., vol.11: pp.94-95. Apr. 1947. Describes new race pyrenaeus from Pas de la Case in Pyrenees, differing from typical race (Alps).

198. Puységur, K. de, "Note sur un accouplement entre Zerynthia polyxena-creusa Meig. et Z. rumina-medesicaste Ill." (In French). Rev.franç.Lépid., vol.11:pp.10-15. 23 June 1947. ♂ Z. polyxena-creusa found copulating with ♀ rumina-medesicaste. An abnormal meeting, since flight periods hardly overlap.

199. Rungs, Ch., "Les Cimeliidae du Maroc." (In French). Rev. franç. Lépid., vol.11: pp.86-90, pl.4. Apr. 1947. Describes as new:Cimelia margarita atlasica(Moyen Atlas) & form paupera, C. vaulogeri thamii (S.W. coast of Marocco) & form pudibunda. Photos of types of thamii,atlasica,pudibunda; of ♂ genitalia of thamii, C.margarita andalusica.

200. Russell, S.G. Castle, "A Short Account of 'The Bright Bequest' of Aberrations and Varieties of British Lycaenidae with Biographical Notes on the Collector." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.1-4, 1 pl. 12 Dec. 1947. Collection left to S. London Ent. & N.H. Society.

201. Sabrosky, Curtis W., "Winthemia citheroniae,new species, with notes on the correct name of W.cecropia(Diptera,Larvaevoridae)." Proc.Ent.Soc.Wash., vol.50: pp.63-67. March 1948. These parasitic flies occur,the latter in larvae of Platysamia cecropia,and the former n.sp. in pupae of Citheronia regalis.

202. Seok, D.M., (Title in Japanese). (In Japanese). Zephyrus, vol.9:pp.281-282, 1 map. June 1947. List giving(new?) records of butterflies in Korea.

203. Seok, D.M., "The study on the variation of Everes argiades Pallas of Korea." (In Japanese). Zephyrus, vol.9: pp.283-285. June 1947. Entirely in Japanese.

204. Sevastopulo, D.G., "An Abnormal Brood of Leucania irregularis Walker." The Entomologist, vol.81: pp.38-40, figs.1,2. Feb. 1948. Reports 4 larvae with abnormal 4th abdominal segment-- probably genetic. Note by C.N. Hawkins.

205. Shirôzu, Takashi, "Description of a new species of the Genus Favonius Sibatani et Ito, 1943, from Honshu, Japan (Lycaenidae, Theclinae)." (In Japanese & English). Zephyrus, vol.9:pp.238-244, pl.20. June 1947. Describes(in English) F.yuasai as new, comparing it with related spp. Good photos of yuasai,F.orientalis,Neozephyrus brillantinus.

206. Shirôzu, Takashi, "Notes on two allied species of the genus Hasora Moore in Formosa and the Loochoo group (Hesperiidae)." (In Japanese). Zephyrus, vol.9: pp.245-255, pl.21. June 1947. Extremely detailed synonymy and notes on status and distribution of H. chromus inermis and H. taminatus vairacana. Excellent photos of both.

207. Shirôzu, Takashi, "Notes on Phengaris daitozana Wileman and its allied species P. atroguttata formosana Matsumura in Formosa (Lycaenidae)." (In Japanese). Zephyrus, vol.9:pp.256-264, pl.22. June 1947. Detailed synonymy of both spp. P. matsumarai Sonan sunk as synonym of formosana. Forms, aberrations dropped into synonymy. Fine photos of both spp.; figs. of ♂ genitalia.

208. Shirôzu, Takashi, "Notes on three species of the Genus Celastrina Tutt described from the Far East (Lycaenidae)." (In Japanese). Zephyrus, vol.9: pp.265-269, 2 figs. June 1947. Sinks formosana Baker and postimacula Mats. under C. puspa myla. Places C. ishigakiana as race of C. puspa. Discusses C. sachalinensis. Figures holotypes of postimacula and ishigakiana.

209. Shirôzu, Takashi, "Note on Bibacis (!) argenteola Matsumura recently described from Formosa (Hesperiidae)." (In Japanese). Zephyrus, vol.9: pp.270-271. June 1947. Dropped as synonym of Epargyreus tityrus.

210. Smith, F.W., "Notes on the occurrence of Herse convolvuli L. and Pararge aegeria L. (Lep.) in Scotland." Ent. Monthly Mag., vol.84: pp.39-40. Feb. 1948.

211. Thompson, J. Antony, "Some Preliminary Observations on Pieris napi (L.)." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.115-122. 12 Dec. 1947. Many detailed observations of reared broods. Fertility of eggs laid was surprisingly low (43%). ♂♂ each fertilized several females successfully. Copulation longer than 2 3/4 hrs. always meant a mishap and no fertile eggs resulted. ♂♂ would never pair with fertile ♀♀. Buff or green pupae had either color independently of background. It is disappointing to find an investigator with genetic interest and apparent scientific background naming five new aberrations in the full taxonomic sense. What if the thousands of carefully studied and accurately described mutants of Drosophila melanogaster were to be so named!

212. Tilden, J.W., "Aestivation in larvae of Arachnis picta picta Packard." Pan-Pacific Ent., vol.24: p.31. Jan.1948. Larvae feed on Lupinus spp., are dormant (aestivate)from April- September, then pupate; adults emerge in October.

213. Turner, A. Jefferis, "New Australian Species of Boarmiadae (Lepidoptera)." Proc. Roy. Soc. Queensland, vol.58: pp.71-112. 27 Oct. 1947. New genera: Peratodactyla, Apheloceros, Hypochariessa, Macqueenia, Haploceros, Stinoptila, Allophyla, Heterogena, Cryphaea, Liometopa, Middletonia, Crypsiphila, Threneta, Lacistophanes, all monotypical, types listed below in capitals as n.spp., except Cryphaea(type C.xylina Turn.) and Hypochariessa (type H.ochrophara). N. spp. are: Diastictis genialis; PERAT. RUTILA; Ectropis dicranucha, fragilis, loxoschema; Symmectroctena mesopsamma, leucoprosopa; APHEL. DASCIODES; Psilosticha oresitropha, barypasta, argillea; Boarmia metapolia, catephes, polysticta, odontosticha, loxosticha, prionodes, leucanthes, acclinis, coloba, cymatomita, mesochra, pansticta, atactopa, gravis, platyleuca, phlaeopa, tessaramita, odontocrossa, harmodia, phricomita, aellographa, virescens, cymatias, spodochroa, eucrypta, conspersa, baryspila, phaeopasta; Syneora speciosa, sinuosa, piperata; Cleora hemichroma, pachydesma, chionospila, phaeocala, gypsochroa, dolichoptila; Tigridoptera leucoplethes; Epidesma aetheria; Metrocampa pyrrhophanes; Lomographa sciara; Casbia eutactopis, didymosticta, idiocrossa, leptorrhoda, ammophila, ereutha, adoxa, pallens, celidosema, tanaoctena, coniodes, plinthodes; Orsonoba diplodonta, stramenticea, euctista; Picrophylla rhabducha, rubea; Idiodes rhacodes, gerasphora; Planolocha hyposema, lactea; MACQ. CHIONOPTILA; Stathmorrhopa aphotista; HAPL. SPHENOTYPA; STIN. ACONTISTICA; Ciampa stenoptila; Chlenias chytrinopa, ochrocrana; ALLO. SPECIALIS; Stibaroma habrostola, astrepta; HET. EXITELA; Amelora anthracocentra, conia, belemnophora, ceraunia, anepiscepta, thegalea, adusta; Mnesampela macroptila, smyriodes, idiograpta; LIO. RECTILINEA; MIDDL. SUAVIS; CRYP. ATMOPHANES; THR. PELLOPHANES; LAC. HACKERI. Authaemon stenonipha sunk as synonym of A. poliophara. Fairly thorough descriptions, but no figures, unfortunately.

214. Ureta R., Emilio, "Nuevos Ropaloceros (Lep.) de Chile." (In Spanish). Bol. Mus. Nac. Hist. Nat. (Chile), vol.23: pp.47-61, 2 pls. 1947. Describes as new: Teriocolias atinas kuscheli (Putre), Thecla wagenknechti (Rio Los Choros), Pyrgus fides form haywardi (Vicuña). Also describes and discusses: Phulia nysias (with P. nysiella as synonym), Tatochila microdice macrodice, Thecla dissentanea, T. sapota, T. davara joannisi, Hemiargus ramon (with H. martha as synonym), Itylos speciosa, Hylephila phylaeus. Poor photos of all 11 forms.

215. Viette, P., "Une localité interéssante: Saint-Jean-de-Losne(Côte d'Or)." (In French). Rev. franç. Lépid., vol.11:pp.58-61. Mar. 1947. Locality for Lepidoptera on plants near and in water beside Saône River:Nymphula,Schoenobius,Hydroecia,Lycaena dispar,etc.

216. Williams, Carroll M., "Physiology of Insect Diapause. III. The Prothoracic Glands in the Cecropia Silkworm, with Special Reference to their Significance in Embryonic and Postembryonic Development." Biol.Bull., vol.94: pp.60-65, figs.1-3. Feb. 1948. Reviews literature, gives diagrammatic figures of gland which controls diapause in Platysamia cecropia and describes morphology and histology of gland.

217. Williams, Harold B., "Angerona prunaria L.: Its Variation and Genetics." Proc. & Trans. S. London Ent. & N.H. Soc. 1946-47: pp.123-139, 3 pls. 12 Dec. 1947. Very little factual genetics in spite of title. Describes and figures many new and known aberrations of this geometrid moth. Beautiful plates, one in color.

218. Worm-Hansen, J. G. & Sv.G.Larsson, "Semasia krygeri Rebel (Lep.Tortr.). Morphology and biology." Ent. Meddelelser, vol.25:pp. 174-195, 2 pls., 4 figs. 15 Nov. 1947. Detailed account by Larsson of external morphology of all stages. Notes on biology by Worm-Hansen. The moth is gallmaker on Artemisia in Denmark. Numerous drawings.

NOTICES BY MEMBERS

LARGE STOCK OF HIGH GRADE INSECT PINS from Czechoslovakia available at 65¢/100, $6/1000. R.G.Wind, Rt.1, Box 145, Livermore, Calif.

ALL SPECIES OF EUREMA desired, esp. mexicana, proterpia, arbela, gundlachia, damaris, xanthochlora and others. Cuban butterflies offered in exchange. Dr. S.L.de la Torre y Callejas, Playa 75½, Matanzas, CUBA.

FOR SALE: All NYMPHALIDAE of Rhodesia and S. Africa, except Charaxes p. pelias. In good condition. Write: R.H.R. Stevenson, Selukwe, Southern Rhodesia, AFRICA.

BELGIAN CONGO BUTTERFLIES. About 40 named spp. available. Desire in exchange North American Papilionidae (Incl. Parnassius) and Pieridae, in papers. S.G. Kiriakoff, 14 Universiteitsstraat, Ghent, BELGIUM.

EXOTIC AND LOCAL LEPIDOPTERA & INSECTA- Buy and sell. Exchange in some genera. I have contacts in remote regions in various countries. Will supply material for specialists or artwork or for general collections and museums by arrangement. R.F. Sternitzky, Star Route, Laytonville, Mendocino Co., Calif.

E. Jarmoulle,2 rue Ernotte, Watermael, BELGIUM, will be pleased to help Lep. Soc. members obtain Belgian Microlepidoptera on an exchange basis.

WANTED: Tingidae ("Lace Bugs") of world in alcohol. Give name of plant host and as much other ecological detail as possible. Will collect in exchange any local Lepidoptera(or other insects) you specify. N.S. Bailey, 16 Neponset Ave., Hyde Park 36, Mass.

WANTED: Papilionidae from any part of the world. Best prices paid for rare species. Robert G. Wind, Rt.1, Box 145, Livermore,Cal.

PHALAENIDAE(Noctuidae), NOTODONTIDAE, SPHINGIDAE of U.S. and Canada wanted in exchange for these families of New Jersey Pine Barrens area. Will collect in limited numbers in these and other families of Lepidoptera for exchange or sale. Correspondence invited. J.W. Cadbury 3rd, Spung Hollow, R.D. 1, Pemberton, N.J.

Would like to correspond with collectors interested in Speyeria and Saturniidae. Have good exchange for these,needed for my collection. E.J. Frederick, 5508 E.Gage,Bell,Calif.

"TRANSPAR MOUNTS": The material for starting a collection in Transpar Mounts is available in the "Transpar Mount Butterfly Collection Kit". This contains 116 mounts of all sizes, five display panels and tools; price $32.50. Additional packages of mounts and individual display panels can be ordered separately. Further information on request. Otto Ackermann, 639 Walnut Street, Irwin, Pa.

FOR SALE: Boloria, Oeneis, & Erebia from the Far North. R.J. Fitch, Rivercourse P.O. via Lloydminster, Saskatchewan, CANADA.

LIVING MATERIAL

NOW AVAILABLE: LIVING COCOONS from Indo-Australian Fauna- Antheraea mylitta, Attacus cynthia, Attacus edwardsi. Otto H. Schroeter, 613 Williams Street, New London, Conn.

Specimens & cocoons of SATURNIIDAE of the world desired. Correspondence invited. F.E. Rutkowski, St. Bede College, Peru, Illinois.

Wanted for determination, exchange, or purchase: HEMILEUCAS from the U.S. & Mexico. Wish to urge collectors to search for larvae in spring, egg masses in fall & winter. Information regarding H.sororius greatly desired. D.L. Bauer, P.O. Box 469, Yuma, Arizona.

Wanted: CATOCALA EGGS, esp. of Crataegus (Hawthorn) feeders. Will exchange for other Catocala material. Sidney A. Hessel, 8 Woodmere Blvd. S., Woodmere,New York.

GENERAL NOTES

NOTES ON THE DISAPPEARANCE OF POLYGONIA GRACILIS AT RANGELEY, MAINE, IN 1947.- Polygonia gracilis appears to be a very rare and local butterfly. Some years ago I was fortunate enough to discover a colony at Rangeley,Maine. Each year, along a narrow gauge railroad track a small series of specimens was taken.

Two other Polygonia occurred also in the same general area, but not at the precise spot where gracilis was taken. These are faunus and progne. They always were more abundant than gracilis.

The spring of 1947 was very wet at Rangeley. It rained almost continually from the time of my arrival there, early in June, until the latter part of July. This proved to have a very serious effect on the Polygonia species. Since they hibernate as imagoes it is essential that there be some warm, sunny days in the spring for them to fly around, mate, and oviposit. A rainy spring seriously interferes with all of this. Even if a few adults survive and eggs are laid, the subsequent emerging larvae risk being destroyed by the dampness.

Last summer when the season for the imagoes to be on the wing finally came around, I was anxious to see what I would catch, but not a single gracilis appeared although I hunted for them every warm and sunny day just where I had taken them for a number of years. Stranger still, not a single faunus or progne was to be seen. Perhaps these colonies have been destroyed and the species will have to be reintroduced. I doubt, however, whether there will be a colony of gracilis again at that particular locality, because while faunus and progne appear to be common throughout Maine, I know of no other colony of gracilis within a great many miles.

- Cyril F. dos Passos, Mendham, N.J.

PLEASE NOTIFY THE NEWS EDITORS
OF CHANGES OF ADDRESS PROMPTLY

A few copies have been returned recently.

QUESTIONS AND ANSWERS

Q. "Where can I find any information concerning Hemileuca sororius? Particularly a good description and any localities where it has been taken?"

A. Original description: Henry Edwards, Papilio, I: 100, 1881. Figured (photo of type) Packard, Monogr.Bombycine Moths, pt.3:p.131, pl.63,fig.14; also reprints original description and Dyar's Key. Compared with related species: Dyar, Proc.Ent.Soc.Wash. 13, 5 ff., 1911. Bibliography: Lepidopterorum Catalogus fasc.58: p.454. I think all data are based on the original type specimen; material from Lower-California is very rare in collections.

Q. "I have heard quite a bit about a species of skipper which possesses the frenulum in one sex. Could you tell me its name, where it is found, and any other important facts which you might know about?"

A. Euschemon rafflesiae McLeay is found only in Australia, and the specimens I have seen come from Queensland. It is a normal skipper except for the frenulum, and has a normal skipper caterpillar and pupa, much like those of our silver spotted skipper. It feeds on Wilkiea (Monimiaceae), and is figured in all three stages in Tillyard's "Insects of Australia and New Zealand". The butterfly is black, with yellow patches, blue or green shades and orange end of abdomen; it varies somewhat locally, and has been divided into three races.

W.T.M. Forbes

Q. "Is there any other way of distinguishing between Colias philodice and eurytheme besides ground color and size? Since I am partially color blind I have a lot of trouble with these species."

A. The differences between these species are quantitative only, so that in any case absolute identification is most difficult and sometimes impossible. However, one character that is usually more than 80% accurate for the northeastern United States is the size of the spots in the female border melanic band, being proportionally larger in eurytheme than in philodice. All characters are modifiable by the fluctuations in weather conditions during larval growth and this one is no exception. Also, hybridization has resulted in the partial blending together of the characters of each. Unfortunately, no single visible characteristic can be used to separate the two without question but with practice combinations of other minor characters will be apparent which will lead to nearly accurate identifications; preliminary aid may be required of someone who is not color blind. Fuller information may be obtained from the writer.

W. Hovanitz

(In view of Dr.Hovanitz' long study of Colias this question was sent directly to him.- Ed.)

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NEW MEMBERS

Butterfly World Supply House, 289-291 E. 98th St., Brooklyn 12, N.Y.
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* * *

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Address all Society correspondence to: P.O. Box 104, Cambridge 38, Mass., U.S.A.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
P.O. Box 104, Cambridge 38, Massachusetts, U.S.A.

Editor - C. L. REMINGTON *Assoc. Editor* - J. E. REMINGTON

Volume II June 1948 Number 6

INTERNATIONAL AID

The News editors hope that a Society program will be initiated soon, under the guidance of one or more members, to provide regular aid to our destitute colleagues in the countries of Europe where suffering continues to be widespread. There is also a great need to aid institutions in which important collections are in danger of ruin because of lack of equipment, as reported by Kiriakoff in the News. Volunteers to organize such a program are earnestly requested. American entomologists have been conspicuously negligent in this direction, in contrast to the rallying of the ornithologists and some botanical groups.

Meanwhile, individual response is needed to aid two institutions victimized by violence and recently brought to our attention.

During the shocking Communist riots in Bogota, Colombia, on 10 April, a vicious mob set fire to the Instituto de La Salle and destroyed the entire University as well as the Museum and Library. The noteworthy insect collection had been assembled by Apolinar Maria, the foremost Colombian entomologist. A member of the Society recently wrote that he was sending Apolinar "all of my entomological publications and a representative collection of (local) butterflies to help replace the lost collections at the Institute. Would it not be a really good-neighbor job if all of us in the Lepidopterists' Society did the same thing?" Packages may be sent to: Hermano Apolinar Maria, Carr.9ª Nr.27.45, Sur.,Bogota, COLOMBIA. Insects should be addressed to: Museo Instituto de La Salle,Bogota,COLOMBIA.

In February, 1945, shortly before the liberation of the Philippines, the Japanese army destroyed the College of Agriculture at Laguna, burning the fine insect collection. Dr. L.B. Uichanco, Dean of the College and an excellent lepidopterist, was himself injured at that time. He has recently written that they are starting to rebuild the collection. It will bring valuable aid if a substantial number of the Society members in all parts of the world will send small series of the species, especially of butterflies, of which they have duplicates. Urgently needed are separates of papers and all books and periodicals on insects. Dr. Uichanco's address is: College, Laguna, PHILIPPINES.

We hope to obtain brief reports on Japan, China, Korea, Formosa, Malaya, the East Indies and more information on Europe this year.

ADDITIONAL WAR LOSSES IN GERMANY

After sending the former account (News 2: p.49), I have received further details, kindly supplied by Professor Hans Sachtleben, Director, Deutsches Entomologisches Institut, now at Blücherhof, Mecklenburg (Russian Zone). Professor Sachtleben writes that a very high proportion of the museums and collections in his zone have been destroyed, and that besides this in many cases no data are yet available regarding the amount of the damage sustained. To the list of larger private collections which have been completely lost, the following must be added: Von Frohrich, Aachen; Pfaff, Frankfurt a.M.; Till, ib.; Urbahn, Stettin. A further list of German lepidopterists killed or deceased, comprises: Prof. F. Eggers, Hamburg; Dr. K. Dannenberg, Berlin; Max Gaede, ib.; Prof. O. Meder, Kiel; Dr. K. Frh. von Rosen, Kreuth near Tegernsee; Prof. Süffert, killed a couple of days before the fall of Berlin to the Russians. On the other hand, Dr. Carl Börner, the well known authority on the classification of the Lepidoptera, and Prof. Bernhard Rensch, one of the world's leading taxonomists, are living and working.

Lepidopterists will be glad to hear that the well known dealers in insects, Messrs. O. Staudinger and A. Bang-Haas, Dresden-Blasewitz, still carry on, although Dr. Bang-Haas is dangerously ill; Messrs. H. Wernicke, ib., have also resumed business. There even has been founded a new firm, Messrs. Koch and Albert, Entomologisches Institut, Dresden-Wachwitz. It is not yet known whether there is any prospect at present of business with the United States, but the fact that these firms still exist, is encouraging for the future.

- S.G. Kiriakoff, Ghent, Belgium

PLEASE NOTE

The address of the News editors, beginning 1 September 1948, will be:

Dr. & Mrs. C.L. Remington
Osborn Zoological Laboratory
Yale University
New Haven 11, Connecticut

It is not yet certain what will be the permanent mail address in New Haven for the News. Meanwhile, PLEASE SEND ALL SOCIETY CORRESPONDENCE TO THE ABOVE ADDRESS AFTER THE INDICATED DATE.

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NATIONAL MUSEUM

PRINCIPLES OF TAXONOMY - IV.

With the rise of genetics a special branch has appeared which is of the greatest importance to taxonomists and is becoming increasingly integrated into the working principles of the progressive, broadly-trained taxonomic biologists. This offshoot is frequently called POPULATION GENETICS and is concerned primarily with genetic evolution of structural and physiological characters of species, races, and micro-races as geographical units.

Taxonomists have long asked themselves how any two related species became separate. Various theories have been put forward confidently from time to time, but it is by no means certain that the real answer has been expressed thus far. However, it now seems probable that one species rarely, if ever,has split into two while the two diverging units were in actual contact (sympatric) and thus able to try to interbreed. Therefore, species must arise when two or more populations of a species become so separated by actual barriers that interbreeding does not occur. If the separation is maintained for a few hundred thousand years, fundamental differences become fixed in the populations by a combination of random mutation and selection, by the environment, of the mutations which have survival value. Many of the mutations and chromosomal modifications not only change the wing markings, bristles,type of flight, host plant preferences, and so on, but they also produce physiological changes within the body. Then, when the original barrier (a desert, ocean, mountain range)is finally removed and the now different populations are re-united, interbreeding cannot occur for one of several reasons: 1) there is no inclination to intermate because the sex-attractant odors of one do not interest the other; 2) the copulatory structures do not fit(the "lock and key principle"); 3)the sperms of one new species cannot fertilize the eggs of the other; 4) if fertilization does occur, a series of generations cannot result from the mating, because the offspring die in the egg, the larval or pupal stages,or if they reach the adult stage they are sterile.

Modern taxonomy continues to deal with the visible structural differences (coloration, genitalia, wing venation, bristles, claws, etc.), but it concerns itself to an important degree with differences in habits, distribution, chromosomes, and differences perceptible by experimental physiology. Of special importance, too, is the diligent prosecution of experimental cross-mating to determine the degree of sterility between related "species". It is the view of the writer that free inter-fertility between so-called species means that they are not TRUE species. If a gray Precis (= Junonia) from France is interfertile with a red Precis from Cuba,they are merely geographical races ("subspecies") of the same species. However, if an Asiatic Precis has male genitalia essentially identical to those of a North American Precis, but cross-matings produce no fertile offspring or notably reduced fertility in the first generations, they are clearly distinct species.

C.L.R.

PHIL RAU (1885-1948)

Phil Rau, widely known student of insect behavior, passed away suddenly at his home in Kirkwood, Missouri, on 30 May 1948. He was born in St. Louis, Mo., 12 April 1885. Having been left an orphan when only 10 years old, his formal education was ended early in life. However, having an inquiring mind, and eager for learning, he succeeded in reducing this deficiency through his own efforts. Insects had interested him since early youth. When he was 20 years old he spent 2 years in special study at Washington University in St.Louis.

Rau's interest first centered in the Coleoptera and he started to form a beetle collection. However, he found taxonomy boresome, so he soon gave that up. Shortly thereafter he met and came under the influence of Charles H. Turner, then head of the biology department of Sumner Teachers College in St. Louis. Dr. Turner was interested in insect behavior and was conducting a series of unique experiments in his laboratory. Rau, fascinated by Turner's work, determined to follow in his footsteps.

Rau began publishing articles on insect behavior in 1910. Thereafter papers from his pen appeared at frequent intervals in numerous scientific periodicals, especially the entomological journals. Although his chief interest was in the bees and wasps, many of his papers treated insects of other orders. Many of his earlier papers were concerned with Saturniidae and we find such articles as"Sexual Selection Experiments in the Cecropia Moth", "Longevity in Saturniid Moths, an Experimental Study", "The Fertility of Cecropia Eggs in Relation to the Mating Period", and "Sex Attraction and Rhythmic Periodicity in Giant Saturniid Moths". Other important articles which dealt with Lepidoptera were: "The Night Flight of Diurnal Butterflies" and "The Yucca Plant and the Yucca Moth; an Ecological Study".

Two of Rau's studies appeared in book form: "Wasp Studies Afield", by Phil and Nellie Rau, published in 1918, and "Jungle Bees and Wasps of Barro Colorado Island",published in 1933. Of the latter work William Morton Wheeler commented: "It is, in my opinion, one of the most outstanding recent contributions to natural history... The book is written in a very entertaining style, easily intelligible to any layman." Modified, this statement may be justly applied to any of Rau's work. His devoted wife shared his interests and was coauthor, with him, of many published papers.

Phil Rau was not only an entomologist but he found an interest in all phases of natural history. He was always attentive toward young and budding naturalists and did everything within his ability to foster their interests. His home was the mecca of the entomologists and other naturalists of the vicinity.

Rau was a Life Member of the Academy of Science of St. Louis, a member of the American Association for the Advancement of Science, a Fellow of the Entomological Society of America, and a member of the Lepidopterists' Society.

Edwin P. Meiners

THE ARCTIC LEPIDOPTERA OF BAKER LAKE, NORTH WEST TERRITORIES*

by T. N. Freeman
Ottawa, Ontario

North of the last dwarfed and wind-swept spruce, lies the true arctic zone - a northern prairie land, or rocky barrens, usually mantled with glacial debris, often climatically inhospitable but nevertheless extremely fascinating. Insect collecting over most of this vast area may often result in a total lack of specimens or one may witness an insect population so numerous as to stagger the imagination; it depends entirely on where one is as well as on temperature and other atmospheric conditions at the time. The wind is usually strong and one may conclude that some days at least will be cold (45° F.) and sudden rain squalls will appear. With this in mind, it is essential that the collector possess woolen underclothing, several pairs of heavy woolen socks and waterproof and windproof outer garments, such as heavy duck trousers and wool-lined, heavy duck parka with attached POINTED hood. I emphasize the pointed hood so that the biting flies will have no large lee surface upon which to alight and then crawl around to bite the collector on the cheek or temple. The best general foot-wear consists of rubber-bottomed leather-topped laced boots and these will require a good supply of dubbing. A pair of unlined gloves and a mosquito and black-fly head-net are essential. The collector must also possess a liberal quantity of a GOOD biting fly repellent, as well as a disposition sufficiently philosophic to allow for some physical and mental inconveniences. You may leave your flash-light behind because of the continuous daylight, and for the same reason, your lamp for attracting moths will be of little use. Your magnetic compass may point in any direction depending upon your location from the magnetic pole, and sometimes it will spin merrily around and around. This may seem a bit foolish but I wish to emphasize that these conditions prevail over most of the true arctic regions and collecting butterflies in this area cannot be compared with collecting them in a southern locality on a nice warm sunny day.

It is often profitable, because of the sudden advent of cold weather, to search for butterflies under rocks or other cover, and a good deal of general insect collecting is accomplished by this method. I collected several Colias boothii Curt. at Baker Lake, during a strong north wind with the thermometer registering 40° F. - a temperature about 5° below the minimum for the activity of even the hardiest arctic butterfly. These boothii were obtained by picking them up as they lay on their sides, with wings closed, on the shallow, floral carpet of the region. On such days some of the Oeneis species often may be found under the shelter of a rocky outcropping which possesses a southern exposure. These butterflies often accumulate in such areas when the sun is shining. Apparently they linger too long in the heat of the warm rocks after the sun is obscured by clouds, and the cold winds force them to crawl into the nearest shelter. Their camouflage is remarkable and intensive searching is necessary. On such days you will be astonished by the number of butterflies obtainable without a net. Your fingers will be none too warm even with gloves on, and snow squalls may pass across the tundra. Such days have their merit because they allow the collector some respite from the incessant annoyance of the countless myriads of mosquitoes.

ONE OF THE STEPPES ON THE LAKE SLOPE—
the home of Colias boothii

Baker Lake is approximately 200 miles inland from the northwestern shore of Hudson Bay and the settlement is situated near the mouth of the Thelon River on the northwest shore of the lake. The terrain in this vicinity consists of a rolling, treeless prairie or moor-land, with immense sweeping valleys separated by ridges of granitic outcropping in low relief. This shallow soil is peaty in texture and overlies perpetually frozen gravel or glacial deposits. This area approximates the centre or neve of the great Keewatin ice sheet of the Pleistocene glaciation and because of this there is relatively little glacial debris. The soil supports a low grassy-mossy carpet intermixed with an amazing display of myriads of brightly colored wild flowers in strong contrast to the drab green carpet. Steppes occur along the broad slopes, and on the southern sides of these the vegetation attains its maximum luxuriance and consists of ericaceous plants, dwarf birch and dwarf willow. In such locations insect life reaches its greatest density.

RHOPALOCERA

Colias boothii Curt. Fifty-six specimens, July 23 - August 13, 1947. This strongly flying sulphur flutters rapidly along the sheltered sides of the steppes or rocky promontories. It hugs the ground as it flies back and forth over the more luxuriant vegetation

(cont. on next page)

*Contribution No.2537, Div. Entomology, Science Service, Dept. Agriculture, Ottawa, Ontario.

and it is seldom seen on the wind swept plains or on the top of the granitic ridges. It loves to visit the ericaceous blooms and each individual haunts a particular, restricted and sheltered area for a long time. Its wing beat is more rapid than that of our common philodice and it flushes with startling rapidity. My limited observations and acquaintance with boothii and nastes Bdv. would suggest two well defined species, existing in the same general area but occupying different habitats and exhibiting extreme belligerence toward one another when they meet. The speculation suggested by Holland, on the basis of Sutton's Southampton material, that boothii is the result of hybridization between hecla Lef. and nastes, has little foundation in fact. The variability of boothii certainly would suggest a hybrid origin but would it not be more rational to assume that boothii, if a hybrid, is the result of the fusion of two populations which do not exist at present, in their original form, rather than the result of the fusion of two species now in existence? The effect of the Pleistocene glaciation on the insect fauna of Canada no doubt was considerable. If we must account for the total variability of boothii on the basis of a hybrid origin alone (which I doubt) is it not feasible that the ice sheet may have isolated two populations of ancestral boothii, each of which developed its own characteristics of maculation (geographical subspecies) without the development of gametic incompatibility, and that these populations fused into one when the ice barrier was removed? There is no evidence, to my knowledge, that hecla and boothii hybridize at the present time. Furthermore, they appear to occur in different habitats and, in my opinion, the total variability of boothii does not intergrade with that of nastes.

Colias nastes subarctica McD. Two specimens, August 1 and 8, 1947. This butterfly was not common at Baker Lake during the past summer. Several were observed but they fly with such rapidity that capture is difficult. They were observed, as at Churchill, Man., on the top of the wind-swept rocky ridges and the rapidity of wing beat somewhat resembles that of a skipper.

On August 7, the sun shone for the first time in a week and the temperature soared to 57° F. Through the mosquito haze, I observed my first nastes, greenish against the lichens and rocks, and hugging the ground as it bore against a fresh north wind. They are difficult to capture and if missed by the net, they suddenly shoot upward and fly with the wind for a considerable distance at a safe altitude. Unlike the Oeneis, they do not alight soon and I observed several startled nastes starting across the 25 mile expanse of Baker Lake. Their rate of flight, aided by the wind, and their apparent intention, could only suggest an attempted lake-crossing. Ordinarily, I believe nastes is quite sedentary and occurs in local restricted populations - quite unlike the general and widely distributed boothii.

Erebia rossii rossii Curt. Twenty-four specimens, July 20 - August 13, 1947. The first butterfly I encountered at Baker Lake was rossii. The temperature was 45° F. and the weather inclement. A short period of sunshine caused this specimen to venture on the wing and the rather slow flight of the Erebias make them an easy target. From this characteristic I refer to the Erebias as Bouncing-Browns. At Baker Lake, this species occurs rather commonly along the moist areas of the broad slopes and around the hummocky, grassy shores of the numerous lakes. It is truly a marsh or wet ground butterfly and I wondered what particular guardian angel watched over me as I ran without being aware of where I trod, over the hummocky, wet ground in pursuit of rossii.

Erebia fasciata fasciata Butl. Eight specimens, July 23, 25, 26 - August 7, 1947. This beautiful and somewhat variable species was not common at Baker Lake. It occurred in the same habitat as rossii and its lazy, typically "bouncing-brown" flight caused it to be the most easily captured butterfly at Baker Lake.

Oeneis melissa assimilis Butl. Fifty-four specimens, July 23 - August 8, 1947. This species and boothii were the commonest butterflies encountered at Baker Lake. It occurs occasionally along the broad slopes but is usually found in numbers, sunning itself on the sheltered or south side of the rocky outcroppings, near the top of the wind swept ridges. Like its companion species taygete hanburyi Wats., it flushes suddenly when disturbed, rapidly flits with the wind for a short distance, then folds its wings and drops suddenly to almost perfect camouflage and concealment among the lichens, mottled granites or dull colored mosses. Marking the spot it alights, sneaking around "down wind" and scanning the spot systematically through the mosquito haze, sometimes results in the pleasant surprise of discovering the specimen lying on its side. You are "down wind" so watch for its sudden flight past your head if you are not cautious enough to approach stealthily. I found that by walking carefully among the rocks I did not frighten them much and they would only fly a few feet, thus facilitating capture. If a cloud suddenly obscures the sun, the temperature drops rapidly and after a few minutes the butterflies will be chilled and become inactive. At such times, diligent search along the edges of the rocks often results in a good easy catch, as I mentioned at the beginning of this article.

Oeneis taygete hanburyi Wats. Seventeen specimens, July 23 - August 13, 1947. This butterfly occurred in the same habitat as assimilis but was not as plentiful. It is larger than assimilis and does not fly as rapidly. While chasing a specimen of this species on July 23, the writer overran a female Ptarmigan with her brood of ten chicks. In spite of the sudden distraction I managed to capture my specimen. One never knows what to expect in the arctic.

(concl. on next page)

Boloria polaris polaris Bdv. Eighteen specimens, July 20 - August 10, 1947. This species occurs rather sparingly along the sweeping slopes and valleys of the area. It is a rapid flier and is extremely difficult to follow when flushed. The brown maculation blends well with the short vegetation and the butterfly suddenly appears and often disappears just as abruptly. Typical of most of the arctic butterflies,this species flies very close to the ground and this adaptive habit certainly does not facilitate their capture. When not in flight, they crawl awkwardly among the lichens, mosses and other abortive vegetation.

Boloria improba Butl. Two specimens August 2 and 5, 1947. It was rare at Baker Lake and captured along with polaris. It is typically an arctic butterfly of the barrens,specifically distinct from frigga Thunb. and occurs later than that species. Both species occur in some localities on Baffin Island, and unless they were specifically distinct, a hybrid swarm would be manifest. Frigga mainly occurs in the northern boreal forest zone and rarely extends its range into the treeless area.

Boloria aphirape triclaris Hbn. One ♂, August 8, 1947. This single specimen was taken along the broad slope adjoining the lake. The Canadian National Collection contains specimens from Wakeham Bay, Hudson's Str., N.W.T. 23 - 25 August 1927 (F. Johansen).

Plebeius aquilo aquilo Bdv. Two specimens, August 7, 10, 1947. This drab Blue was rare at Baker Lake last summer. It occurred in the habitat of C. boothii where the vegetation was most luxuriant on the southern sides of the steppes or rocky prominences.

HETEROCERA

NOCTUIDAE

Anomogyna sp. 1 ♂, August 7, 1947.
Archanarta quieta constricta Wlk., 10 ♂, 2 ♀, August 2 - 10, 1947.
Sympistis lapponica Thunb. 1 ♂, August 7,1947.
Lasiestra leucocycla Staud.,1 ♂,August 7,1947.
Anarta richardsoni Curt., 1 ♂, August 7, 1947.

GEOMETRIDAE

Dasyuris polata Dup.,4 ♂,2 ♂,August 2-13,1947.
Xanthorhoe baffinensis McD. 2 ♂, July 23, 25, 1947.
Aspilates orciferaria Wlk., 9 ♂, July 27 - August 7, 1947.

PYRALIDAE

Crambus trichostomus Christ., 3 ♂, July 25, August 2, 8, 1947.
Plodia interpunctella Hbn. Many specimens infesting walnuts in the Hudson's Bay Post.

OLETHREUTIDAE

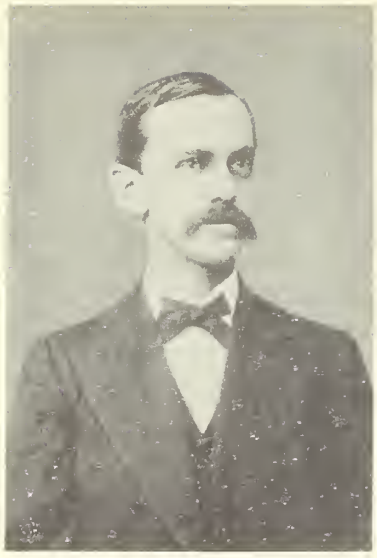
Olethreutes mengelana Fern.,1 ♂, July 25,1947.
Olethreutes tessellana Pack., 4 ♂, July 23, August 2, 8, 1947.
Olethreutes inquietana Wlk.,1 ♀,August 8,1947.

Summary of A. Jefferis Turner's PHYLOGENY AND CLASSIFICATION OF THE LEPIDOPTERA

This paper (Proceedings of the Linnean Society of New South Wales 71: 303-338,1947), is the culmination of the late Dr. Turner's study for very many years of nearly all major groups of moths. The classification is based almost exclusively on venational characters. Contrast the treatment of the Rhopalocera with that of Clark (see p.73, below). The endings "iadae" and "ianae" used by Turner should be "iidae", following the international Règles.

Suborder HOMONEURA
- Superfamily MICROPTERYGOIDEA (Micropterygidae, Eriocranidae, Mnaesarchaeidae)
- Superfamily HEPIALIDOIDEA (Prototheoridae, Anomosetidae, Palaeosetidae, Hepialidae)

Suborder HETERONEURA
- Division ASTHENOCHORDA
  - Subdivision RHOPALOCERA
    - Superfam. HESPEROIDEA (Hesperiadae)
    - Superfam. PAPILIONOIDEA (Papilionidae)
    - Superfam. NYMPHALOIDEA (Nymphalidae, Pieridae, Lycaenidae)
  - Subdivision MICROPTILA
    - Superfam. TINEOIDEA
      - Fam. Elachistidae (Coleophorinae, Scythrinae, Elachistinae, Douglasianae, Cosmopteryginae)
      - Fam. Gelechiadae (Hypnomeutinae, Amphitherinae, Thalmarchellinae, Oecophorinae, Blastobasinae, Gelechianae, Xyloryctinae)
      - Fam. Tortricidae (Chlidanotinae, Eucosminae, Tortricinae, Phalonianae)
      - Fam. Copromorphidae (Copromorphinae, Carposininae)
      - Fam. Aegeriadae
      - Fam. Glyphipterygidae (Glyphipteryginae, Heliodininae, Heliozelinae)
      - Fam. Plutellidae (Plutellinae, Epermenianae, Gracilarianae)
      - Fam. Tineidae (Adelinae, Lampronianae, Tineinae, Lyonetianae, Oposteginae, Cyclotorninae, Epipyropinae)
      - Fam. Nepticulidae
    - Superfam. PTEROPHOROIDEA (Orneodidae, Pterophoridae)
    - Superfam. PYRALOIDEA (Thyrididae, Phycitidae, Galleriadae, Crambidae, Schoenobiadae, Pyralidae,Pyraustidae, Tineodidae)
    - Superfam. ZYGAENOIDEA (Zygaenidae)
- Division STHENOCHORDA
  - Superfam. COSSOIDEA (Arbelidae, Cossidae)
  - Superfam. CASTNIOIDEA (Castniadae, Tascinidae)
  - Superfam. PSYCHOIDEA(Psychidae,Limacodidae)
  - Superfam. LASIOCAMPOIDEA (Lasiocampidae)
  - Superfam. NOCTUOIDEA (Anthelidae, Noctuidae, Nolidae, Hypsidae, Lymantriadae, Arctiadae, Syntomidae)
  - Superfam. DREPANOIDEA (Callidulidae, Drepanidae)
  - Superfam. SPHINGOIDEA (Sphingidae)
  - Superfam. URANOIDEA (Uranidae, Epiplemidae)
  - Superfam. GEOMETROIDEA (Oenochromidae, Boarmiadae, Geometridae, Sterrhidae, Larentiadae)
  - Superfam. BOMBYCOIDEA (Saturniadae, Bombycidae, Brahmaeidae, Cymatophoridae, Notodontidae)



Geo. D. Hulst

BRIEF BIOGRAPHIES

14. George Duryea Hulst (1846-1900)

Dr. L.O. Howard, in the introduction to his Insect Book, wrote: "I know a stock broker, an insurance agent, a commerical traveler, a hotel clerk, a minister of the Gospel, a keeper of a beer saloon, a portrait painter, a hardware merchant, a stonecutter, an iron founder, a carpenter and builder, a wholesale wine merchant, a lawyer, a chemist, an undertaker, a librarian, an army officer, a navy officer, and any number of physicians and teachers who take the greatest delight in the study and collection of insects." He could have elaborated upon this list to include nearly every walk of life, but he could especially have mentioned "minister of the Gospel" in the plural, for clergymen, next to teachers and physicians, lead the ranks of enthusiastic amateur entomologists. In 1872 a few interested collectors met and organized the Brooklyn Entomological Society. New members were rapidly added to the growing organization. Among the earlier ones to join the Society was Rev. George D. Hulst, who was destined to become one of its most prominent and respected members.

George Duryea Hulst was born March 9,1846. He graduated from Rutgers College in 1866 and the Theological Seminary at New Brunswick, N.J., in 1869. Following this he was installed as pastor of the South Bushwick Reformed Church in Brooklyn, where he remained for the rest of his life. Rev. Hulst became keenly interested in natural history during his student days. Botany was his first love. Entomology, however, soon occupied his interest and it was in this science that he did his most notable work. At first interested in the Lepidoptera generally, he later specialized in the Geometridae and Pyralidae. By 1878 the Brooklyn Entomological Society had flourished to the extent of publishing its Bulletin. To this publication Rev. Hulst was a frequent contributor from its inception. In Volume 3 appeared "A Catalogue of the Catocalae of North America with Notes", and in Volume 7 a monograph of "The Genus Catocala".

In 1885 the Brooklyn society ceased publication of its Bulletin and, combining with the journal Papilio, issued a new periodical under the name Entomologica Americana. This journal continued through six volumes, Rev. Hulst being the editor of Volumes 3 and 4. About this time he began to specialize in the Geometridae and Pyralidae, becoming an authority in these families. A monograph of "The Epipaschiinae of North America" from his pen appeared in Volume 5 of Entomologica Americana. In 1890 his monograph on "The Phycitidae of North America" appeared in Volume 17 of the Transactions of the American Entomological Society. This is a scholarly work and still the last revision of the group. He collaborated with Dyar in his "List of North American Lepidoptera", which appeared in 1902, preparing the list of Geometridae and Phycitinae.

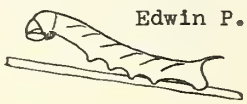
After the passage by Congress of the Hatch Act, which provided for the organization of State Agricultural Experimental Stations, Rev. Hulst served for a short time as entomologist of the New Jersey Agricultural Experiment Station in 1888-89. He was followed in this capacity by John B. Smith.

Rev. Hulst was firm in the conviction of his opinions, which at times brought him into sharp conflict with some of his colleagues. That he was not without humor, however, is evident from some of his editorial comments in Entomologica Americana, notably "A Bee new to Entomology" (a "bee in the bonnet") which appeared in Volume 3, and "Handling Wasps without Harm" in Volume 4. This latter was a comment on an article which appeared in Science in which the author had stated that "if one holds his breath wasps, bees and hornets can be handled with impunity".

Rev. Hulst built up a large collection of Lepidoptera. Commenting upon it in a letter written in 1887 he said it "is North American only but in Diurnals is good, in Sphingidae, Zygaenidae and Bombycidae fair; in Noctuidae rather poor except in Catocala where it is one of the best; in Geometridae and Pyralidae by odds the best in existence; in Tortricidae and Tineidae very poor". At the time of his death it was estimated to contain over 2200 species and varieties, over 6500 specimens, with at least 550 types.

Rev. Hulst was elected a member of the A.A.A.S. in 1880 and a Fellow in 1888. In 1891 he received the degree of Ph.D. from Rutgers College, his alma mater. While still relatively young, he died suddenly on November 5, 1900, at his home in Brooklyn, N.Y.

Edwin P. Meiners, M.D.



GEORGE WHEELER (1858-1947)

Reverend Wheeler was one of the most active British amateur lepidopterists until a few years before his passing on 9 December 1947. His book, "Butterflies of Switzerland", published in 1933, is well known. He also was responsible for the completion of Volume XI of "British Lepidoptera" by J.W. Tutt, after the latter's death in 1911. Wheeler devoted most of his attention to collecting and studying variations of Lepidoptera. He was elected Secretary and Vice-President of the Entomological Society of London and in 1933 was honored as a Special Life Fellow.

L.P. Grey is investigating the Boloriidi of North America as a sequel to the thorough treatment of Speyeria recently produced by Grey and C.F. dos Passos. There is a particular need for extensive material of the helena, epithore, frigga, and kriemhild groups from Utah, Idaho, Montana, Wyoming, western Colorado, and New Mexico. Collectors having such specimens are urged to lend them to Mr. Grey (address: R.F.D., Lincoln, Maine) and to present to him imperfect males for genitalic dissections. Collectors who plan to be in any of these regions this summer should make a special effort to get large series of the Bog Fritillaries.

Dr. A.B. Klots is working on the manuscript of a new butterfly book on the same plan as the famous Peterson field guides to North American birds. The first volume will cover the area east of the 100th meridian. It will be freely illustrated in color and will give prominent attention to biology and basic taxonomy. The News will announce its publication as soon as it appears.

SUMMER TRIPS

At least among the American members numerous trips are planned or have been completed by Lep. News readers. Here are a few:-

F.G. Werner is now in Mexico and later will collect intensively in the southwestern U.S.A. C.E. Wood will also be in Mexico.

W.T.M. Forbes and C.F. dos Passos are attending the Zoological Congress in Paris and Entomological Congress in Stockholm and will be visiting various European collections.

Mrs. Fred Williams has returned from a trip to Arizona, Utah, and Nevada.

F.H. Rindge is visiting the Eastern museums in connection with his geometrid studies.

C.P. Alexander will concentrate on Oregon in this summer's collecting.

J.G. Franclemont and L.R. Rupert will go to the New Jersey Pine Barrens for moths.

L.P. Grey and A.C. Frederick have been collecting on Cape Breton (eastern Canada).

P.S. Remington is in the Colorado Rockies enjoying, with Don Eff, some of the best collecting there in many years.

Lep.Soc. members & subscribers now exceed 350!

A BLOOD-SUCKING FLY ATTACKING LEPIDOPTERA

A minute fly has been found attached to the wings of several species of Lepidoptera in Venezuela by René Lichy. The tiny fly pierces a wing-vein of the lepidopteron and sucks the "blood" (hemolymph) of the butterfly or moth. The presence of the attacker can usually be detected by the loss of scales in the small area of the wing on which the blood-sucker is situated. Lichy reported that there was usually only one fly on each lepidopteron attacked, but that the migrating season of the butterflies was accompanied by a great increase in the blood-suckers with even a little Eurema carrying 2 or 3 flies. The flies, when present, were almost invariably on the upper side of the hind wings. Satyridae were the most frequently attacked, but most other families of butterflies and the Euchromiidae (moths) were also infested. Lichy listed 24 spp. on which he took the flies. His paper is in the Boletin de Entomologia Venezolana 5:1-4(1946).

Lichy suspected that his flies were Simuliidae, but the published records of similar cases are all of Ceratopogonidae and the fly he figured seems to be one of these "punkies". Ceratopogon pierces the wing veins of moths and butterflies in Europe. Two other genera have been found on the wing veins of many species of dragonflies in Liberia and the Dutch East Indies. Others have been taken from caterpillars in Hungary, Florida, Cuba, Mexico, Peru, Brazil, Samoa, Sumatra, Java and Ceylon.

Careful field observations by Lep. Soc. members should result in new records of these attacks. The little flies should be collected if possible and the host species noted.

The most amazing report of this kind is of tiny larvae living parasitically in the wing veins of large Lepidoptera in South America. The only record is an old one and the larvae were thought to be of the fly family Phoridae.

C.L.R.

With the collecting season well along, it is appropriate to reiterate last year's reminder to keep sufficiently detailed data with all specimens collected. The minimum information without which no specimen has much value is: (1) the exact locality, including the county; (2) the date of capture; (3) the name of the collector. In addition it is very desirable to note the habitat ("juniper scrub", "grassy marsh", "maple ravine", etc.) and in mountains it is important that the approximate elevation above sea-level be given. Copulating pairs should always be associated in some way, since they may provide valuable taxonomic evidence.

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All members interested in rearing Lepidoptera are reminded that we are glad to give in the News your notice regarding the exchange(or reasonable sale) of living eggs and pupae. It is important to send us your notice early so that it will be out long before emergence time.

ERRATUM: In the preceding issue, on page 52 (lines 1, 40) and on page 53 (lines 9, 18), "palmyra" should be "palmira".

219. Beirne, Bryan P., "Notes on the Origin and History of the British Insect Fauna." Proc.Roy.Ent.Soc.Lond.(A), vol.23: pp.1-8, 1 fig. 18 Mar.1948. Gives notes amplifying his main paper(see Lep. News 2: 18) on this subject. Deals mainly with Lepidoptera.

220. Berger, L., "Espèces nouvelles pour la Faune belge". (In French). Lambillionea, (Brussels), vol.47:pp.27-28,59-61,78. Apr., Oct.,Dec.1947. Records Cucullia artemisiae, Laelia caenosa, Procus aerata, Hydraecia fucosa, Sedina büttneri, Diarsia florida.

221. Berger, L., "Remarques sur la faune belge". (In French). Lambillionea, vol.47: pp.39-40, 74-75. Apr., Oct., 1947.

222. Betz, J.-T., "Peut-on parer aux déformations dues à l'humidité des insectes préparés?" (In French). Rev.franç.Lépid.,vol.11: pp.222-226. Dec. 1947. Means of combating effects of moisture on insect collections.

223. Betz,J.T., "La Faune Rhopalocère Anglaise et sa distribution sur le Continent dans ses régions les plus voisines de l'Angleterre". (In French). Lambillionea, vol.48: pp.3-12, 3 text figs. Feb. 1948. Reviews parts of Ford's "Butterflies"(see Lep.News 1:p.3) and compares Continental situations to British conditions given by Ford.

224. Blanc, Léo, "Essais sur la technique à employer pour la préparation des chenilles." (In French). Rev. franç. Lépid., vol.11: pp.211-217. Dec. 1947. Detailed directions for preparing inflated larvae without expensive equipment.

225. Boursin, Ch., "Un nouveau genre paléarctique de la sous-famille des Agrotinae." (In French). Rev. franç. Lépid., vol.11: pp.257-258. Feb. 1948. New genus Hemiexarnis (type:- moechilla Pglr.) related to Parexarnis, Euxoa, etc. Has spp.: cucuna Pglr., epiphana Brsn., iuguma Brdt.

226. Boursin, Ch., "Un nouveau Standfussiana Brsn. (Agrotis Auct.) dans les Alpes françaises." (In French). Rev. franç. Lépid., vol.11: pp.300-302. Apr. 1948. Describes as new: S. osmana carriéi (Hautes-Alpes).

227. Carpenter, G.D.Hale, "Notes on the males of Papilio dardanus Brown (Lep.), with the definition of a new transitional race and a redescription of P. dardanus ochracea Poulton." Proc.Roy.Ent.Soc.Lond.(B),vol.17: pp. 11-17,9 figs.,pl.1. 20 Feb.1948. Describes new race meseres (Suna, Kenya), based on genitalic differences, transitional between races cenea, tibullus, and polytrophus. Redescribes race ochracea (Marsabit). Fine photos of adults; ♂ genitalia shown.

228. Carr, F.M.B., "Notes on Collecting Lepidoptera in 1947." The Entomologist, vol.81: pp.57-63. March 1948. Notes from Bournemouth, England.

229. Caruel, M., "Aberrations et Classification." (In French). Rev. franç. Lépid., vol.11: pp.129-132,pl.2. June 1947. Maintains,with obvious truth, that some aspects of aberration study have scientific importance. Shows that the occurrence of same type of aberration in several spp. proves very close relationship, giving as example an aberration common to Vanessa atalanta, "Euvanessa" antiopa, Polygonia c-album, figuring 1st two. Believes lack of such an aberration in one species means phylogenetic remoteness from supposed relatives.

230. Caruel, M., "Satyrus hermione L. existe-t-il dans le département de la Marne? A-t-il jamais existé dans celui des Ardennes?" (In French). Rev.franç.Lépid., vol.11: pp. 206-208. Nov. 1947. Believes hermione is dying out or gone from N.E.France & Belgium.

231. Corbet, A. Steven, "Papers on Malaysian Rhopalocera. V. The Conspecificity of the American Precis lavinia (Cramer) with the Oriental Precis orithya (Linnaeus)." The Entomologist, vol.81: pp.54-56, 8 figs. March 1948. Concludes, apparently soundly, that American Buckeye("Junonia coenia") is actually a race of Oriental Precis orithya. Figures ♂ genitalia of orithya, lavinia, lintingensis, lemonias, villida. (It seems likely that biological studies will prove lavinia & orithya closely related, but distinct spp. ♂ genitalia are by no means the final criterion of conspecificity. - Ed.)

232. Crosson du Cormier, A. & P. Guérin, "A propos de la division spécifique du genre Boloria Moore.- B. aquilonaris Stichel en France." (In French). Rev. franç. Lépid., vol.11: pp.177-195. Nov. 1947. B. aquilonaris claimed to be full species, rather than race of pales, primarily because aquilonaris (= arsilache) lives only in sphagnum bogs and has as host plant Oxycoccos palustris,- although some color and genitalic differences known. Larva described in detail. All known localities given. Seems unfairly critical of Warren's paper and to have given unsatisfactory PROOF of specific distinctness of aquilonaris, which remains a matter of opinion until cross-mating tried.

233. Crozes,J., "Argynnis hecate Schiff. dans le Tarn." (In French). Rev. franç. Lépid., vol.11: p.144. June 1947.

234. Curran, C.H., "The Life History of the Tent Caterpillar." Nat. Hist., vol.57: pp. 168-172, ill. Apr. 1948. Fine photos.

235. Darteville,Edm., "Varia. Une utilisation imprévue d'un nid d'Anaphe". (In French). Lambillionea, vol.47: pp.72-74. Oct. 1947. Records the use of the nest of the social caterpillars of Anaphe (prob. venata) for the headpiece of a wooden fetish statuette by natives of the Congo.

236. Dasse, G., "Espèces nouvelles pour la Faune belge". (In French). Lambillionea, vol.47: pp.58-59. Oct. 1947. Records Procus versicolor.

237. Dasse, G., "Trachea furva Schiff." (In French). Lambillionea, vol.47: pp.61-63. Oct. 1947. Recorded from Belgium.

238. Edwards, E.O.,"Notes on Butterflies of Western Queensland." Australian Zool., vol. 11: pp.225-232. 11 Feb. 1948. Life history and field notes on 43 spp.

239. Eliot, Neville, "Some notes on the habits of butterflies." The Entomologist, vol. 81: pp.64-69. March 1948. Observations on color preferences in flower feeding by butterflies in S. France.

240. Forbes, Wm.T.M., "A Second Review of Melinaea and Mechanitis (Lepidoptera, Ithominae)." Journ.N.Y.Ent.Soc., vol.56:pp.1-24, pls.I,II. March 1948. Summarizes additions to these genera since writer's earlier revisions. Describes as new:Melinaea isocomma (R. Negro, Colombia), Mechanitis polymnia race solaria (Sucre,Venezuela) and race mauensis and bipuncta (Venez.Guiana). Maps.

241. Harper, G.W., "Lepidoptera in West Sussex, 1947." Ent. Rec. & Journ. Variation, vol.60: pp.28-32. March 1948.

242. Harrison, J.W.Heslop, "Inbreeding in Hebridean Lepidopterous Populations." Ent.Rec. & Journ.Var., vol.60:pp.46-50. Apr.1948. Investigates tiny, isolated (inbred) colonies of 14 spp. Concludes that no weakening effects arose from inbreeding. Reduction in size probably due to favorable adaptation.

243. Hayward, Kenneth J., "Hesperioidea Argentina XVI." (In Spanish). Acta Zoologica Lilloana, vol.4: pp.5-18, 1 fig. 12 Dec. 1947. New Argentine records: Jemadia gnetus, Urbanus erycina, Telemiades purpurascens, Discophellus porcius, Nascus hydarnes, Hyalothyrus mimicus, Cyclosemia satyrus. Sunk as synonyms: Urbanus elegans Hayw.(under U. octomaculata), Epargyreus argentosus Hayw. (Under Proteides clarus), Pellicia herse Hayw. (under P. minor). Notes on other spp. Figures ♂ genitalia of C. satyrus.

244. Hayward, Kenneth J., "Algunas plantas huéspedes de las larvas de los Hespéridos americanos (Lep.Rhop.Hesp.)." (In Spanish). Acta Zoologica Lilloana, vol.4: pp.19-54. 12 Dec. 1947. Lists foodplants (with references) of 136 spp. and races of North and South American skippers(over 70 U.S.A.spp.). Also a list of host plants, with skippers listed thereunder, and bibliography.

245. Hayward, Kenneth J., "Hesperioidea argentina XVII." (In Spanish). Acta Zoologica Lilloana,vol.4:pp.55-61,2 figs. 12 Dec.1947. New Argentine records: Pythonides jovianus crameri, Pellicia extensa, Antigonus mutilatus,Anisochoria sublimata,Chiomara dichrous, Erynnis austerus. Sunk as synonyms:Pellicia herse Hayw. (under P. minor), Pythonides suppar Drdt. (under P. jovianus crameri). Figures ♂ genitalia of P.extensa,E.austerus.

246. Hayward, Kenneth J., "Una nueva especie de Automolis (Lep. Het. Arctiidae)." (In Spanish). Acta Zoologica Lilloana, vol.4: pp.63-67,1 pl. 12 Dec. 1947. Describes as new and figures types of A.flammula(Fontana, Chaco, Argentina). Reprints orig. descriptions and figures A. subflammans, mathildae.

247. Hayward, Kenneth J., "Nuevas especies de hespéridos sudamericanos(Lep. Rhop.)." (In Spanish). Acta Zoologica Lilloana, vol.4: pp.121-128,6 figs. 12 Dec.1947. Describes as new: Pellicia hypsipyle (Villavicencio, Colombia), P. hecata (Colombia), Pholisora melaina(Misiones,Argentina), Ph. toba(Paraguay), Moeris meraca(Brasil), Mnesthes silvanus(Brasil). Figures ♂ genitalia of all.

248. Hayward, Kenneth J., "Hesperioidea argentina XVIII." (In Spanish). Acta Zoologica Lilloana, vol.4: pp.133-144. 12 Dec. 1947. New Argentine records: Pholisora giselus, Poanes paranensis, Atrytone peneia, Euroto geisa, Schausana altama, Turesis lucas. Sinks as synonyms: Telemiades simplicius Hayw. (under T. laogonus), Lerodea violacea (under Thargella caura). Lists name changes resulting from Evans' findings.

249. Hayward, Kenneth J., "Catalogus Hesperidarum Rei Publicae Colombianae." (In Spanish). Acta Zoologica Lilloana, vol.4: pp. 201-392. Synonymic catalogue of 550 spp. and races in 158 genera of Hesperiidae from Colombia. Generotypes noted. Many localities given. A necessary reference work for skipper specialists.

250. Herbulot, C., "Une géomètride nouvelle pour la faune de France: Sterrha fathmaria Obth." (In French). Rev. franç. Lépid., vol.11: pp.170-171. Oct. 1947.

251. Herbulot, C., "Nouvelles Chasses à Saint-Tropez." (In French). Rev. franç. Lépid., vol.11: pp.220-221. Dec. 1947.

252. Higgins, L.G., "Butterflies in Granada." The Entomologist, vol.81: pp.25-29, 49-53. Feb., Mar.1948. Annotated list of 82 spp., describing 2 new races: Polyommatus amandus tora and P. escheri agenjoi. No figures.

253. Hovanitz, William, "Differences in the Field Activity of Two Female Color Phases of Colias Butterflies at Various Times of the Day." Contr.Lab.Vert.Biol.,no.41: 37 pp. Apr. 1948. Found white ♀ form proportionately more active early in morning, orange ♀ form proportionately more active later in day. Found high temperature and low solar radiation equal to low temperature and high solar radiation in causing maximum activity.

254. Inoue, Hiroshi, "Notes on some Geometridae from Japan, Corea and Saghalien." (In English). Bull. Lepid. Soc. Japan, vol.1: pp.1-17, 10 figs. June 1946. Describes as new: genus Nipponogelasma (type - Gelasma immunis Prout), Scopula cinis (Nagano, Japan), Abraxas grossulariata memorabilis (Kaijo, Corea), Ourapteryx nomurai (Gifu, Japan), Gonodontis aurata "form" uchidai (Mt.Teiso, Hokkaido), Boarmia definita ultradefinita (Nagano, Japan). Considers: Gelasma colataria a species distinct from grandificaria; Comibaena a subgenus of Euchloris; Acidalia virginaria Imaidz. a synonym of Scopula modicaria; Trichodezia leechi (Staud.) not an aberration, but the Honshu & Kyushu race of T. kindermanni, which is typical on Hokkaido); Xenospora the correct genus for flavipes (Ménétries), with sachalinensis Mats. as synonym; Trichopteryx, not Trichopterigia the correct genus for volitans (Buth); japonica Inoue a synonym of Hydrelia nisaria; Asthena chibiana Mats. a synonym of Hydrelia flammeolaria; truncangulata Wehrli a synonym of Cystidia agrionides; Ourapteryx jesoensis a race of Euctenurapteryx maculicaudaria, with O. laeta Mats. a synonym. New distribution records from Corea: Chloromachia gavissima aphrodite, Euchloris diluta, E. volgaris amurensis, Hemistola zimmermanni, Xenospora flavipes, Trichopteryx volitans, Dysstroma corussaria, Perizoma taeniata, Venusia cambrica, Percnia prouti, P. giraffata, Buzura recursaria confusa, Ectropis bistortata. New record for Japan: Ninodes scintillans. Key and figures of ♂ genitalia of the 5 Japanese spp. of Asthena. Figures ♂ genitalia of Pseudosteganía defectata, Laciniodes plurilinearia, Nipponogelasma immunis, and Gelasma grandificaria.

255. Inoue, Hiroshi, "A Catalogue of the Geometridae of Corea." (In English). Bull. Lepid. Soc. Japan, vol.1: pp.19-59. June 1946. Lists 251 spp., with localities. Complete index to spp. and generic names.

256. Janmoulle, E., "Microlépidoptères intéressants capturés à Aye, en 1946". (In French). Lambillionea, vol.47: pp.35-36, 54-56. Apr., Aug. 1947.

257. Janmoulle, E.,"Espèces nouvelles pour la Faune belge." (In French). Lambillionea, vol.47: pp.2,27,57-58. Feb.,Apr.,Oct.1947. Records Polychrosis fuligana, Trifurcula atrifrontella, Adela ochsenheimerella, Pancalia latreillella, Tinea personella.

258. Janmoulle, E., "Un synonyme inattendu: Alucites porella F.-V.Raspail." (In French). Lambillionea, vol.47: pp.13-16. Feb. 1947. Porella a synonym of Acrolepia assectella Z.

259. Janmoulle, E., "Microlépidoptères nouveaux pour la faune belge". (In French). Lambillionea, vol.47: pp.43-44. Aug. 1947. Records Eccopisa effractella, Conchylis affinitana, Evetria pinicolana, Cymolomia hartigiana, Bucculatrix maritima.

260. Janmoulle, E., "Une question de nomenclature". (In French). Lambillionea, vol.47: pp.64-72. Oct. 1947. Thorough search for correct names traced. Concludes: Cycnodia H.-S. was still-born and is not available; Elachista argentella Cl. has as synonyms - cygnipenella Hübn., cygnella Dup., cygnipennis Stph., semialbella Stph.; Mendesia farinella Thnbg. has as synonyms - cygnella Tr.?, subargentella Dattin.

261. Johnson, Frank & Charles D. Michener, "New Neotropical Saturnioid Moths (Lepidoptera)." American Mus. Novitates, No.1372: 15 pp.,16 figs. 14 May 1948. Described as new: Dysdaemonia raveni (El Alto, Peru); Dirphia rufescens(Minas Gerais, Brazil), D. flavosignata(Sergipe, Brazil), D. centralis (Tarma, Peru), D. levis (Rio Piene,Peru); Dirphiopsis albofasciata (Chiapas, Mexico); Automeris lauta (Chiapas, Mexico), A.oaxaca (Oaxaca, Mexico). Meaningful descriptions, drawings of ♂ genitalia, and photos of holotype given for each species. Either photos or actual specimens leave something to be desired. It is interesting to note in these Saturnioids the great differences shown by genitalia where the color pattern is deceptively similar to another species.

262. Kaisila, Jouko, "Die Makrolepidopterenfauna des Aunus-Gebietes." (In German). Acta Ent. Fennica, vol.1: 112 pp.,10 figs., 63 maps. 1947. Lists records for 79 butterflies, over 500 macro-moths, for region between Lake Ladoga and Lake Onega,Finland. Analyses ecology and zoogeography.

263. Kiriakoff, S.G.,"L'aptérisme sexuel chez les Psychidae (Lép.)." (In French). Lambillionea, vol.47: pp.2-7. Feb. 1947. Reviews some theories of origin of wings in insects, actually with little attention to the only widely-held theory among modern specialists--origin of insects from a myriapod ancestor. Latter theory was brought to present state through work of Packard, Brauer, Tillyard, Imms,and Tiegs, not Franz. However, the only possible conclusion is reached-- that ancestral females of Psychidae were fully winged.

264. Kiriakoff, S.G., "Les Papillons Mimétiques". (In French). Lambillionea, vol. 47: pp.46-53, 79-88, 3 pls. Aug. 1947. A scholarly review of the question of mimicry among butterflies. Summarizes fairly the views supporting and attacking the theory of mimicry and concludes (transl.): "probably no species will be destined to become extinct for want of mimetic resemblance. (in the restricted sense adopted here by the writer), but where parallel mutations produce these resemblances, they have a protective value sufficient so that selection will come into play."

265. Köhler, Pablo E., "Las Noctuidae argentinas. Subfamilia Hadeninae." (In Spanish). Acta Zoologica Lilloana, vol.4: pp.69-105. 12 Dec. 1948. Continues writer's revisions of "Noctuidae". Describes as new: genera Oortiana (O. olivacea nov.), Rugofrontia (R. unifera nov.); spp. Craterestra distincta (Chubut), Polia olivocincta var. intensa (Misiones), P. bruchi (Córdoba), P. rosina (Misiones), Onychestra verdinigra (?), Nephelistis pulcherrima (?), Chabuata mayor var. fasciata (?), C. sedosa (Misiones), C. lacertosa (?), C.anthracina (Tucumán), Hyssia polioides (?), H.paupera (Tucumán), Eriopyga monilis tucumana (Tucumán), E. lilacea (Misiones), E.nigrocollaris (Misiones), E. descolei (?), E.metanensis (Salta), Morrisonia funebris (?), Poliodestra albolimbata (Chubut), Oortiana olivacea (Chubut), Perigrapha benepicta (Salta), Clavipalpula alboradiata (Chubut), Sideridis tridens(Salta), S. marginata (Tucumán), Scriptania mus (Chubut), S. graphica(Chubut), S. albofusca (Chubut), Cirphis haywardi (?), C. lilloana (Tucumán), Borolia roseilinea (Tucumán), B. lilloana(?), Neleucania multistria(Tucumán), Rugofrontia unifera (Chubut), R. micans(Chubut), Lasiestra wittmeri (Oruro, Bolivia). Records 51 other names. Gives key to genera. Serious errors are omissions of designations of type localities and holotypes, almost total lack of comparisons, lack of figures, and lack of genitalic notes.

266. Langeard, P., "Un non-sens à proscrire: 'nymotypique'." (In French). Rev. franç. Lépid., vol.11: pp.260-261. Feb. 1948. Calls attention to fact that "nymotypical" is a meaningless coinage, since no such classical root as "nymo-" exists, and that "typical" is an entirely adequate adjective.

267. Leeds, H.A., "Butterfly Collecting in Wood Walton, Hunts., Area, the Chiltern Hills, and Royston, Herts., during 1947." Ent. Rec. & Journ. Var., vol.60: pp.33-35, 41-43. Mar., Apr. 1948.

268. Le Marchand, S., "Les Tineina: Gelechiidae." (In French). Rev. franç. Lépid., vol.11: pp.145-163, figs. Oct. 1947. Concise summary of the family. Discusses the subfamilies (Apatetrinae, Aristoteliinae, Gelechiinae, Anacampsinae, Chelariinae, Dichomerinae, Lecithocerinae, Autostichinae) and lists the French genera. Gives special notes on 13 genera and an illustrated key to French genera.

269. Lempke, B.J., "Notes sur quelques formes de Pararge megaera L." (In French). Lambillionea, vol.47:pp.17-24,12 figs. Feb.1947. Detailed analysis of aberrational names.

270. Lempke, B.J., "Note sur Maculinea alcon arenaria Lpk." (In French). Lambillionea, vol.47: pp.37-38. Apr. 1947. Supports distinctness of Berger's remarkable species, M. rebeli.

271. Lhomme, L., "Le nouveau piège à insectes de N. Hallé." (In French). Rev. franç. Lépid., vol.11: pp.259-260, 1 fig. Feb. 1948. Describes & figures Hallé's bait trap reported in L'Entomologiste 2: 262.

272. Loritz, Jean, "Quelques aberrations nouvelles." (In French). Rev. franç. Lépid., vol.11: pp.133-134, pl.2. June 1947. Names 3 new aberrations, which certainly do not have the scientific importance Caruel calls for! (see#229, above).

273. Maury, J., "Captures de Cucullia argentea Hufn.en Charente-Maritime." (In French). Rev.franç.Lépid.,vol.11:pp.170-171. Oct.1947.

274. McDunnough, J., "A New Californian Apamea (Lepidoptera, Phalaenidae)." Journ.N.Y. Ent.Soc.,vol.56:pp.51-52,1 fig. Mar.1948. Describes as new and figs. ♂ genitalia of A. cottlei (Arrowhead Lake, Calif.).

275. Mouterde, R., "Nouvelle note sur Lycaena dispar Haw." (In French). Rev. franç. Lépid., vol.11: pp.261-264. Feb. 1948. The inevitable, but not brilliant reply to Stempffer's criticisms (see#298, below).

276. Muspratt, V., "Pullulation de Phytometra gamma L. au Maroc en 1946." (In French). Rev.franç.Lépid.,vol.11: pp.141-143. June 1947. Gives records of swarming in Marocco in 1946, after scarcity in drought year. Suggests that most pupae fail to yield adults in poor years, but remain as pupae for 1 to 3 yrs., emerging in swarms in a good yr.

277. Needham, James G., "A Bucculatricid Gall Maker and its Hypermetamorphosis." Journ. N.Y.Ent.Soc., vol.56: pp.43-50. Mar. 1948. Life history of species living in Helianthus stems in Florida. Feeding stages extremely simplified, last(non-feeding) instar taking usual caterpillar form for pupation. Species severely attacked by beetles, mites, ants.

278. Newman, J.H., "A New Noctuid from Michigan and Tennessee (Lepidoptera)." Occ.Pap. Mus. Zool. Univ. Mich. No.509: 4 pp.,2 pls. 27 Apr. 1948. Described as new: Oligia ambifusca (Parkdale, Mich.). A model paper which other taxonomists would do well to emulate! Excellent figures of ♂ genitalia & full holotype. Genitalia of Oligia diversicolor Morr. also figured.

279. Okada, Y., & M. Torii, "Ueber die japanischen Arten der Gattung Coenonympha." (In Japanese). Trans. Nippon Lepidopterological Soc.,vol.1: pp.2-10, pl.1(1-5). Dec. 1945. Describes as new (in Japanese!) and gives photo of C. oedippus race arothius. Notes on Japanese races of C. oedippus, C. hero, C. iphis, with photos of C. oedippus annulifer, C. iphis khinganensis, C.inornata (Saskatchewan), C. californica (Calif.).

280. Okada, Yoshio, "Description on an aberrant form of Glaucopsyche euphemus daisensis." (In Japanese). Trans. Nippon Lepid. Soc., vol.1: p.26, pl.1(6-8). Dec. 1945. Aberration described,figured but not named!

281. Okada, Yoshio, "On a new subspecies of Spindasis takonis from Japan." (In Japanese). Bull.Lepid.Soc.Japan, vol.1:pp.94-95, pl.1. Oct. 1946. Describes as new and figures S. takonis prospera (Lycaenidae). Figures typical takonis and S. syama formosana.

282. Okagaki, Hiromu, "Consideration of subspecies and forms." (In Japanese). Bull. Lepid. Soc. Japan, vol.1: pp.96-100. Oct. 1946.

283. Okagaki, Hiromu, "On the forms of Spindasis takonis from Japan, especially its marking." (In Japanese). Bull.Lepid. Soc. Japan, vol.1:pp.101-108. Oct. 1946. Names 6 new individual variants as "forms".

284. Ozorski, E., "A propos d'une 3e génération de Lycaena dispar Haw., ssp. rutilus Wern." (In French). Rev. franç. Lépid., vol.11: pp.218-219. Dec. 1947. Larvae of 2nd brood of dispar normally start hibernating in Sept. Writer took one lot just after eclosion, reduced light intensity and day length artificially down to 8 hrs. after 8 days, then rapidly increased it to a 15-hr. day in a week. These larvae all pupated in late September and emerged within 15 days. The control group (untreated larvae) went into hibernation as usual.

285. Picard, J., "Identification des Pyrgus Français." (In French). Rev.franç.Lépid., vol.11: pp.202-205. Nov. 1947. Gives key to identify the 12 spp. in France. Stresses distinctness of P. carlinae and P.cirsii, armoricanus and bellieri as species. Drops foulquieri as race of sertorius.

286. Picard, J., "Répartition en France de Heteropterus morpheus Pallas." (In French). Rev.franç.Lépid., vol.11: pp.226-229, map. Dec. 1947. Not known in the southeastern one-third of France.

287. Powell, H., "Note sur l'abondance de certains Lépidoptères au Maroc au printemps et en été 1946." (In French). Rev. franç. Lépid., vol.11: pp.134-137. June 1947.

288. Puységur, K., "Lycaena (Heodes) dispar s.sp. burdigalensis D. Lucas dans le Lot-et-Garonne." (In French). Rev. franç. Lépid., vol.11: pp.294-295. Apr. 1948.

289. Ramain, Paul, "Contribution à l'étude des espèces et races françaises du genre Erebia Dalman." (In French). Rev.franç.Lépid.,vol.11: pp.195-202. Nov. 1947. Shows E.duponcheli a synonym of E.pluto. Reports E. pluto glacialis as absent from Upper Savoy. Erects new name velesiaca (U. Savoy) for race tristis H.-S. of E. eriphyle. E. pluto and race alecto reported from Valais.

290. Rawson, George W., "A New Subspecies of Lycaena epixanthe Boisduval & Leconte with Comments on the Identity of Typical epixanthe (Lepidoptera, Lycaenidae)." Journ.N.Y. Ent. Soc., vol.56: pp.55-62. Mar. 1948. Describes as new: race michiganensis (Oakland Co., Mich.) with large type series from Mich. and Wisc. Offers clear proof that Boisduval's stated type locality (New Harmony, Ind.) is incorrect and should be on east coast (prob.N.J.). The 3rd race is amicetus from Newfoundland and Nova Scotia.

291. Richard, F., "Ponte des femelles de Rhopalocères en captivité." (In French). Lambillionea, vol.47: pp.7-13. Feb. 1947. See summary on p.74.

292. Richard, F., "Une espèce à rayer de la faune belge: Eupithecia expallidata Dbld. nec Gn.". (In French). Lambillionea, vol. 47: pp.44-46. Aug. 1947.

293. Rütimeyer, E., "Coenonympha leander Esp. ssp. gallica m. espèce et race nouvelles pour la France." (In French). Rev. franç. Lépid., vol.11: pp.251-256, 1 fig., pl.7. Feb. 1948. Recorded from Porté, Pyrénées-Orientales, described as new race(gallica). From ♂ genitalia figures it appears that leander and C.iphis are only one species. Description not clearly set aside in usual convenient manner and types nowhere designated or number stated. Photos of wings:C. iphis and C. leander races iphioides and gallica.

294. Salerou, A., "Simple observation sur les éclosions successives de chrysalides du même jour." (In French). Rev.franç.Lépid., vol.11: p.143. June 1947.

295. Sevastopoulo, D.G., "The Early Stages of Indian Lepidoptera. Part XIX." Journ. Bombay Nat. Hist. Soc., vol.47: pp.197-219. Dec. 1947. Notes on 6 spp. of Papilio, 21 spp. of moths.

296. Sibatani, A., "Zweiter Beitrag zur Systematik der Lycaeninen (= Theclinen) aus Japan und angrenzenden Gegenden nebst Bemerkungen über einige Formen aus Formosa (Lep. Lycaenidae)." (In Japanese). Bull. Lepid. Soc. Japan, vol.1: pp.61-86, 12 figs. August 1946. Lists Lycaeninae of Japan, Sachalin, Korea and Formosa dividing them into tribes: Lycaenini, Sithonini, Strymonini, Theclini, Arhopalini. Erects new genus Teratozephyrus (type - Zephyrus arisanus Wil.). Reviews genitalic chracters. Very poor photos.

297. Sperry, John L., "Southwestern Geometrid Notes and New Species. I." Bull. Brooklyn Ent. Soc., vol.43: pp.54-60. Apr. 1948. Describes as new: Drepanulatrix baueraria (Big Sur, Calif.), Semiothisa melanderi (Baboquivari Mts., Ariz.). Gives notes on spp. of Semiothisa.

298. Stempffer, H., "Note sur Lycaena dispar Haw." (In French). Rev. franç. Lépid.,vol. 11: pp.137-140. June 1947. Sharply criticizes loose thinking given in paper by Réal. Repeats that Heodes is synonym of Lycaena, the only correct generic name for the Coppers, and that hippothoe Obth. is not Linné's hippothoe and is synonym of dispar. Shows that new distribution records prove more zealous collecting, not extensions of range. This paper is the highest type of scientific criticism!

299. Swezey, O.H., miscellaneous notes. Proc. Hawaiian Ent. Soc., vol.13: pp.204-206,217-218. Apr.1948. New island record: Trichoclea postica. Host of Agrotis coniotis: Chenopodium sp.

300. Swezey, O.H., "New Species of Hawaiian Lepidoptera." Proc. Haw. Ent. Soc., vol. 13: pp.259-260. Apr. 1948. Describes as new: Eucymatoge stypheliae (Hydriomenidae) (host- Styphelia tameiameiae), Scotorythra apicalis (Selidosemidae), Omiodes pritchardii (Pyraustidae)(host- Pritchardia beccariana). All from Hawaii.

301. Torii, Masana, "Revision of Erebia-niphonica-group occurring in Japanese Empire." (In Japanese). Trans. Nippon Lepid. Soc., vol.1:pp.11-18,7 figs. Dec.1945. Describes as new: E. niphonica races sakae, okadai. Notes on other races and on E. neriene and E.ligea takanonis, with ♂ genitalia figured.

302. Turner, A. Jefferis, "Revision of the Australian Psychidae (Lepidoptera)." Proc. Roy. Soc. Queensland, vol.57: pp.57-64. 20 Jan. 1947. Describes as new: Hyaloptila, Phasmyalea, Bathromelas (type- hyaloscopa M. & L.), each monotypical (types listed below in capitals); Elinostola hyalina (N.Austr.); HYAL. MELANOSOMA (N.Queens.); Clania persimilis (N.Austr.); PHAS. PELLUCIDA (Queens.); Plutorectis crocobathra (N.Queens), fulva (N.Austr.), dysmorpha (N.Queens.), capnaea (Vict.), paura (Queens.). Records of 27 other spp. No figures! Key to genera.

303. Turner, A. Jefferis, "Contributions to our Knowledge of Australian Microlepidoptera." Proc. Roy. Soc. Queens., vol.57: pp. 65-74. 20 Jan. 1947. Describes as new: Carposina hyperlopha, poliosticha, trigonogramma, sysciodes (W.Austr.), olbiodora, tanaoptera (Tasm.), ceramophanes, loxolopha (W.Austr.), dascioptera (W.Austr.); Paramorpha tenuistria (W.Austr.); Blastobasis pallescens (N.Queens.), scotia (N.Queens.), tanyptera (N.Queens.), mesomochla (S.Austr.), celaenephes, leucochyta, phaeopasta (N. Queens.), pentasticta (N.S.W.); genus Exapateter (Blastobasidae), E. epeirana (N. Queens.); Lithocolletis agrapha, scythrodes (S.Austr.); Phyllocnistis nymphidia (N. Queens.), dichotoma (N. Queens.), spilota, zophosema (Tasm.); Epicephala bathrobaphes, acinacephora, spumosa; Acrocercops argyrosema, euryschema (N.Queens.), peratocapna (N.Queens.), candida, albida; Parectopa rhicnodes, stictocrossa. Where not stated above, type locality is in Queensland. Descriptions brief, n.spp. never compared to known spp.! No figures.

304. Turner, Henry John,"Butterfly collecting in 1947." Ent. Rec. & Journ. Variation, vol.60: pp.35-38. March 1948.

305. Viette, P., "Contribution à l'étude des Hepialidae - 3." (In French). Rev. franç. Lépid., vol.11: pp.292-294, 5 figs. Apr. 1948. Erects new genus, Neohepialiscus,for algeriensis de Joannis. Description and figs. of venation, ♂ genitalia, antennae, tibia.

306. Vigneau, Pierre, "Contribution à l'étude des Lépidoptères de la Gironde." (In French). Rev.franç.Lépid.,vol.11:pp.233-238. Feb.1948.

307. Williams, Joseph L., "Anatomie comparée des genitalia internes de quatres espèces représentant quatres genres et deux sous-familles de Noctuidae (Lepidoptera)." (Transl. into French by S. LeMarchand). Rev. franç. Lépid., vol.11: pp.238-250, 4 figs. Feb. 1948. Continuation of writer's studies on internal ♀ genitalia, here described and figured for Agrotis ypsilon,Feltia subgothica,Euagrotis lubricans,Leucania unipuncta. These Phalaenidae (= Noctuidae), like all Frenatae, are diplotremes (having 2 abdominal orifices). Williams seems to believe the double orifice originated independently twice (from the Micropterygids and the Eriocraniidae), a belief difficult to accept.

308. Wiltshire, E.P.,"Early Stages of Palearctic Lepidoptera, IX." Ent. Rec. & J.Variation, vol.60: pp.1-3. 15 Jan. 1948. Describes and presumably will figure larvae of Pararge roxelana, Cerura leucotera, Catamecia deceptrix, Catocala diversa, Dyscia simplicaria, Nephopteryx diplocapna, from Cyprus, Iraq, and Iran.

309. Wolf, Edgar, "Observations sur les chenilles processionaires du pin. Réflexions sur l'instinct." (In French). Rev. franç. Lépid.,vol.11: pp.163-168. Oct.1947. Gives account of behavior of Pine Processionary Caterpillar and concludes: that no intelligence is manifested, that "instinct is not the opposite of intelligence,it is only the lack of intelligence", and that "the caterpillar never goes otherwise than in following the thread which it has spun." It is a surprise that the latin name of the caterpillar is not given anywhere in the paper!

Review of "CLASSIFICATION OF THE BUTTERFLIES, WITH THE ALLOCATION OF THE GENERA OCCURRING IN NORTH AMERICA NORTH OF MEXICO", by Austin H. Clark

In this paper, published in the Proceedings of the Biological Society of Washington (vol.61: pp.77-81), the author does a service in assembling into one list the most recent classifications of the various groups of butterflies. For the Papilionidae Ford is followed, for the Pieridae Klots, for the Nymphalides Mr. Clark's system based on larvae (see Lep. News 1:52), for the Riodinidae Stichel, for the Lycaenidae the advice of Prof. Forbes and W.D. Field. This list should be compared with that of Warren(see News 1: 74).

The system, with North American genera in parentheses, is as follows:

Superfamily PAPILIONOIDEA
- Group NYMPHALIDES
  - Family SATYRIDAE
    - Subfam. Satyrinae(Coenonympha, Eumenis, Minois, Oeneis, Erebia, Neonympha, Megisto, Paramecera)
    - Subfam. Lethinae (Lethe, Satyrodes)
    - Subfam. Pronophilinae (Gyrocheilus)
    - Subfam. Elymniinae
    - Subfam. Pierellinae
  - Family BRASSOLIDAE
    - Subfams. Brassolinae, Caliginae, Biinae
  - Family MORPHIDAE
    - Subfam. Morphinae
    - Subfam. Amathusiinae
      - Tribes Taenarini, Amathusiini, Hyantini, Discophorini
  - Family APATURIDAE
    - Subfam. Charaxinae (Anaea)
    - Subfam. Apaturinae (Asterocampa)
  - Family NYMPHALIDAE
    - Subfam. Marpesiinae(Megalura, Marpesia)
    - Subfam. Nymphalinae
      - Tribe Nymphalini (Polygonia, Nymphalis, Vanessa, Junonia, Anartia, Hypanartia, Victorina, Hypolimnas)
      - Tribe Melitaeini (Euphydryas, Melitaea, Chlosyne, Phyciodes, Anthanassa, Eresia, Microtia)
    - Subfam. Ergolinae
      - Tribe Catagrammini (Diaethria)
      - Tribe Ergolini (Cystineura, Eunica)
      - Tribe Epicaliini (Myscelia)
      - Tribe Ageroniini (Ageronia)
      - Tribe Gynaeciini (Historis, Smyrna)
  - Family ARGYNNIDAE
    - Subfam. Limenitinae
      - Tribe Euthaliini
      - Tribe Limenitini (Limenitis,Dynamine)
    - Subfam. Argynninae
      - Tribe Cynthiini (Euptoieta)
      - Tribe Argynnini (Speyeria,Boloria,etc.)
    - Subfam. Heliconiinae
      - Tribe Heliconiini (Heliconius)
      - Tribe Dionini (Agraulis, Dryas)
      - Tribe Cethosiini
    - Subfam. Acraeinae
  - Family CALINAGIDAE
  - Family DANAIDAE
    - Subfam. Danainae
      - Tribe Danaini (Danaus)
      - Tribe Lycoreini (Lycorea)
      - Tribe Anellini
      - Tribe Euploeini
    - Subfam. Tellervinae
  - Group NYMPHALIDES. Family DANAIDAE (cont.)
    - Subfam. Ithomiinae
      - Tribes Melinaeini,Thyridiini,Ithomiini
  - Group LYCAENAE
    - Family LIBYTHEIDAE (Libytheana)
    - Family RIODINIDAE
      - Subfam. Nemeobiinae
      - Subfam. Riodininae
        - Tribe Eurybiini
        - Tribe Ancylurini (Caria, Calephalis, Lasaia, Emesis, Apodemia)
        - Tribe Stalachtini
    - Family LYCAENIDAE
      - Subfam. Liphyrinae
      - Subfam. Gerydinae
      - Subfam. Spalginae (Feniseca)
      - Subfam. Lipteninae
      - Subfam. Ceretinae
      - Subfam. Poritiinae
      - Subfam. Ogyrinae
      - Subfam. Amblypodiinae
      - Subfam. Lycaeninae
        - Tribe Theclini (Strymon, Callipsyche, Satyrium, Incisalia, Eumaeus, etc.)
        - Tribe Lycaenini
          - Subtr. Lycaenina (Tharsalea,Lycaena)
          - Subtr. Plebejina (Leptotes, Hemiargus, Plebejus, Cyaniris, Everes, Philotes, Glaucopsyche, etc.)
  - Group PAPILIONES
    - Family PIERIDAE
      - Subfam. Pseudopontiinae
      - Subfam. Dismorphiinae
      - Subfam. Pierinae
        - Tribe Pierini (Neophasia, Appias, Pieris, Ascia)
        - Tribe Rhodocerini (Colias, Zerene, Anteos, Phoebis, Aphrissa, Kricogonia, Eurema, Nathalis)
        - Tribe Euchloini (Anthocaris, Euchloë)
    - Family PAPILIONIDAE
      - Subfam. Papilioninae
        - Tribe Lampropterini
        - Tribe Graphiini (Iphiclides)
        - Tribe Teinopalpini
        - Tribe Papilionini (Papilio)
        - Tribe Troidini (Battus)
        - Tribe Cressidini
      - Subfam. Zerynthiinae
      - Subfam. Parnassiinae (Parnassius)
      - Subfam. Baroniinae

Superfamily HESPERIOIDEA
- Family HESPERIIDAE
  - Subfam. Pyrrhopyginae (Apyrrothrix)
  - Subfam. Pyrginae
    - Tribe Celaenorrhini (Pyrgus,Pholisora, Erynnis, Timochares, Grais, etc.)
    - Tribe Eudamini (Proteides, Urbanus, Telegonus, Achalarus, Thorybes,etc.)
  - Subfam. Hesperiinae
    - Tribe Heteropterini (Pamphilida, etc.)
    - Tribe Adopaeini (Ancyloxypha, Oarisma, Thymelicus, Copaeodes)
    - Tribes Hesperiini (Hesperia, Hylephila, Polites, Poanes, Amblyscirtes, etc.)
    - Tribe Calpodini (Calpodes,Panoquina,etc.)
  - Subfam. Trapezitinae
  - Subfam. Ismeninae
  - Subfam. Euschemoninae
- Family MEGATHYMIDAE (Megathymus)

C.L.R.

HOW TO MAKE ♀ RHOPALOCERA LAY EGGS

In the Belgian entomological periodical Lambillionea (vol.47:pp.7-13), F. Richard had a delightfully written article(in French) on: "Oviposition of female Rhopalocera in captivity." It has so much valuable information that appears to solve most problems of obtaining quantities of eggs for rearing,that I decided to translate for the News readers the essence of M.Richard's instructions. Undoubtedly many Lep. Soc. members have experienced the same difficulties as I in making futile efforts to obtain eggs from a tattered ♀ of a rare species or from an apparent hybrid.

In M. Richard's words, he has found: "a system which I can characterize as truly automatic for the oviposition of the Rhopalocera. It is now possible for me, regardless of the hour of day or night, in less than 15 minutes, to make any species of diurnal flier oviposit and I can state that it is even easier to make Rhopalocera oviposit than species of Geometrids or even Noctuids. Finally, the dissection of ♀♀ proves that they lay their very last egg." However, M. Richard stresses the point of being certain that one is not trying to obtain eggs from a ♂, relating an experience in which he tried for 15 days to make a ♂ Papilio podalirius oviposit! In condensed form, here is the Richard technique.--

1. CHOICE OF THE ♀. Over 95% of ♀♀ which are flying and feeding at flowers have mated and can lay fertile eggs. Virgin ♀♀ rest on foliage and await a ♂. The ♀ can be captured with a net and transferred to a CARDBOARD box (metal boxes are apt to get so hot in the sun that the ♀ dies). "If you take several ♀♀ of the same species, when you get home it will be necessary to provide as many receptacles for ovipositing as ♀♀; to place several ♀♀ together is to renounce...all scientific work; how can you say that in the species you wish to rear two species have not been always confused? We are no longer mere collectors; we are not dealers; the only interest which rearing from the egg can provide us is to enrich our knowledge of entomology; only the rearing from an isolated ♀ can provide information which science can use."

2. THE EGG-LAYING CHAMBER. Glass bottles are undesirable for several reasons and close-mesh cages do not provide proper light. The best receptacle is a common flower pot of an appropriate size to permit the ♀ some freedom of movement. Rest the pot on a glass of water and put a few cuttings of the foodplant in the pot, with their stems placed through the drainage hole in the pot, into the water below. Also add a few flowering stalks of the flowers you found the wild ♀ visiting. Cover the pot with a piece of glass of a convenient size. Introduce the ♀ and keep the pot away from light and warmth for a day while the ♀ recovers from the excitement of capture. Never let the direct sun shine on the chamber. Instead, place a flexible desk lamp containing a 40-watt bulb over the top of the chamber. Put a thermometer in the pot and adjust the distance of the light so that the temperature remains a little below 85° F. (30° C.). Keep the lamp lit for one or two hours at a time, a few times a day. The ♀ will first feed at the flowers, then flutter a bit, and then lay numerous eggs on the host plant. Each time the lamp is turned off, remove the glass cover and substitute netting to allow aeration and reduce the chance for mildew, which can kill every egg. Be sure that fresh flowers are always present, but in discarding the withered ones, watch for stray egg. [Sugar water dripped on flowers also provides nourishment for egg production.- C.R.] Continue to illuminate each day until the ♀ dies. Then remove and mount her immediately, affixing to her the same code number as to the offspring. It is important to record the place and date of capture of the ♀ and dates of egg-laying and death.

3. CARE OF THE EGGS. After the ♀ dies remove everything not carrying eggs, to reduce the possible growth sites for deadly mould. It is not necessary to remove the eggs from the leaves. The leaves should not be allowed to dry, since this may kill the embryo, as will too much moisture. The best system seems to be to leave the egg-bearing plants in the pot, trying to keep them fresh until the eggs hatch. Cover the pot mouth with netting fixed on the pot with string or rubber bands.

The greatest enemies to success are: too much heat, mould from too much moisture, and lack of nectar for the ♀. Never use direct sun for illumination! Now, if you'll excuse the translator, he wants to rush out and try the system himself.

C.L. Remington

Lep.Soc. members with sons or daughters interested in butterflies and moths may put them in touch with collectors of their own age and provide them with an entertaining monthly letter, by making them members of THE MOTH AND BUTTERFLY CLUB. The monthly sheet is called "Notes on Moths and Butterflies" and the editor is: Mrs. Evelyn G. Williams, North San Juan, Calif. An active Lep. Soc. member, she deserves strong support in her excellent work. We endorse the Club unreservedly. Dues are 75¢ per year.

Professor Vladimir Nabokov has recently accepted a professorship of literature at Cornell University. While literature is his primary interest, he expects to continue taxonomic studies of Lycaenidae. One of the finest blends of literature and Lepidoptera we have been privileged to read is Nabokov's on pp.25-28 of the New Yorker magazine for June 12, 1948.

Now available to all Lep. Soc. members are reprints of two papers by Mr. Nabokov. U.S.A. members send 10 in stamps to cover mailing costs. As always, members outside the U.S.A. may have the papers without sending postal costs.- (1) "Some New or Little Known Nearctic Neonympha" (1942,20 pp.); (2) "Notes on Neotropical Plebejinae" (1945, 61 pp., 8 pls.).

There are still a few copies of the Speyeria Catalogue (News 2: p.5) and the paper on Colias eye colors. Also, any member sending us a card requesting it will receive a reprint of Dr. Klot's Eurema paper from the May News. It will be mailed with the next News after your request, so no postage need be sent.

NOTICES BY MEMBERS

In papers with data. CATOCALA texana, amestris and westcotti, pretiosa, mira, verilliana, ahola and other Texas species. For cash or exchange. Complete list on request. L.H. Bridwell, Forestburg, Texas.

Lepidopterists desiring to buy BULGARIAN SPECIES are invited to write: Jordan Chr. Jordanof, Rue Neophit Rilsky 34, Sofia,BULGARIA.

Papered Japanese Rhopalocera offered in exchange for needed specimens from S. & Cent. America, and South Pacific Islands(list available on request). T/5 R.J. Jablonski, Med. Det.,13th F.A. Bn., APO 24, Unit 4, c/o P.M., San Francisco, Calif.

Named BUTTERFLIES from HIMALAYAN FOOTHILLS available for sale. Especially rich in Lethe, Papilionidae, Danaus, Amathusiidae. F.N.Betts, 4, Mount St., London, W.2, ENGLAND.

CASH PAID FOR BUTTERFLIES of almost any species from any part of world. Only perfect specimens with data wanted. Will buy 1 or 100 of any species,or contract for season's catch. A.Glanz, 289 E. 98th St., Brooklyn 12, N.Y.

WANTED FOR STUDY: PAPILIONIDAE OF WORLD, especially P. glaucus group (incl. eurymedon, daunus, etc.); also machaon and thoas group and Nearctic Parnassiidae. Buy or will exchange U.S.Macrolepidoptera. Kent H. Wilson, 430 Ridgewood Road, Fort Worth 7, Texas.

Papered specimens of BRITISH LEPIDOPTERA offered in exchange for American beetles of the families Cerambycidae ("Long-horns"), Prionidae, Lamiidae. Michael G. Fraser, Ennerdale, College Ave., Formby, Lancs., ENGLAND.

LARGE STOCK OF HIGH GRADE INSECT PINS from Czechoslovakia available at 65¢/100, $6/1000. R.G.Wind, Rt.1, Box 145, Livermore, Calif.

ALL SPECIES OF EUREMA desired, esp. mexicana, proterpia, arbela, gundlachia, damaris, xanthochlora and others. Cuban butterflies offered in exchange. Dr. S.L.de la Torre y Callejas, Playa 75½, Matanzas, CUBA.

FOR SALE: All NYMPHALIDAE of Rhodesia and S. Africa, except Charaxes p. pelias. In good condition. Write: R.H.R. Stevenson, Selukwe, Southern Rhodesia, AFRICA.

BELGIAN CONGO BUTTERFLIES. About 40 named spp. available. Desire in exchange North American Papilionidae (incl. Parnassius) and Pieridae, in papers. S.G. Kiriakoff, 14 Univeriteitsstraat, Ghent, BELGIUM.

WANTED: Tingidae ("Lace Bugs") of world in alcohol. Give name of plant host and as much other ecological detail as possible. Will collect in exchange any local Lepidoptera(or other insects) you specify. N.S. Bailey, 16 Neponset Ave., Hyde Park 36, Mass.

WANTED: Papilionidae from any part of the world. Best prices paid for rare species. Robert G. Wind, Rt.1, Box 145,Livermore, Cal.

EXOTIC AND LOCAL LEPIDOPTERA & INSECTA- Buy and sell. Exchange in some genera. I have contacts in remote regions in various countries. Will supply material for specialists or artwork or for general collections and museums by arrangement. R.F. Sternitzky, Star Route, Laytonville, Mendocino Co., Calif.

E. Janmoulle,2 rue Ernotte, Watermael, BELGIUM, will be pleased to help Lep. Soc. members obtain Belgian Microlepidoptera on an exchange basis.

PHALAENIDAE(Noctuidae), NOTODONTIDAE, SPHINGIDAE of U.S. and Canada wanted in exchange for these families of New Jersey Pine Barrens area. Will collect in limited numbers in these and other families of Lepidoptera for exchange or sale. Correspondence invited. J.W. Cadbury 3rd, Spung Hollow, R.D.#1, Pemberton, N.J.

Would like to correspond with collectors interested in Speyeria and Saturniidae. Have good exchange for these, needed for my collection. E.J. Frederick, 5508 E.Gage, Bell,Calif.

American collectors desiring European races of holarctic spp. such as Papilio machaon, Pieris napi, Colias palaeno, Boloria pales, Deilephila gallii, and others should write Dr. H.Wilcke, Kössen/Tyrol,Nr.199, AUSTRIA. His current list gives all groups of Alpine Lepidoptera, incl.: 20 spp. of Erebia, 24 spp. of Blues, 15 of Sphingidae, 85 of Larentia, 12 of Acronicta, 60 of Agrotis, 7 of Catocala, 39 of Eupithecia, 12 of Sesia, 7 of Hepialus, etc. Prices are low, the fee to be sent in the form of CARE packages.

LIVING MATERIAL

LIVING EGGS OF ACTIAS LUNA available in lots of 100 or 1000. M. Eugene Smith, Route 2, Newnan, Georgia.

Can offer living pupae Rothschildia orizaba in exchange for pupae Platysamia columbia or gloveri and Callosamia angulifera. R.L. Halbert, 1201 W. 30th St., Los Angeles 7, Calif.

Wanted: EGGS OR COCOONS OF SATURNIIDAE, esp. Platysamia, for rearing & hybridization stock. Offer in exchange pupae of several genera, including Papilio, Parnassius, Speyeria, Polites, Arctia, and Platysamia euryale, or will buy. D.P. Frechin, 1504 N.Lafayette, Bremerton,Wash.

Specimens & cocoons of SATURNIIDAE of the world desired. Correspondence invited. F.E. Rutkowski, St. Bede College, Peru, Illinois

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Wanted for determination, exchange, or purchase: HEMILEUCAS from the U.S. & Mexico. Wish to urge collectors to search for larvae in spring, egg masses in fall & winter. Information regarding H. sororius greatly desired. D.L. Bauer, P.O. Box 469, Yuma, Arizona.

Wanted: CATOCALA EGGS, esp. of Crataegus (Hawthorn) feeders. Will exchange for other Catocala material. Sidney A. Hessel, 8 Woodmere Blvd. S., Woodmere, New York.

QUESTIONS AND ANSWERS

Q. "Is not Basilarchia as distinct from European Limenitis as Speyeria is from European Argynnis?"

A. Limenitis as used in Europe comprises three rather distinct species; L. sibylla, which is usually thought of first, agrees in structure with Adelpha; while populi, which was named type(unfortunately) many years ago, is the only Old-world species with the same caterpillar as Basilarchia. So if we follow the Code at all, Basilarchia becomes a synonym of Limenitis (typical), and there is no special name for the sibylla group, unless we sink it to Adelpha.

In the case of Argynnis, the type(paphia) is one of the species least like ours, so if we wish to divide the old genus Argynnis, Speyeria becomes as good a section as any of the half dozen others recognized by European "splitters". The nearest European to ours is aglaia, but even this shows good genitalic features, while all our species are almost identical in genitalia.

Q. "What is the correct name for the noctuid moths - Noctuidae or Phalaenidae, and why has the latter been used instead of the more familiar name by some recent writers?"

A. Phalaenidae if you are an extreme literalist in following the rules of the Code, because Phalaena typica Linnaeus falls in this group. If tradition, a hundred years and more of usage and common sense rule over bookkeeping, Noctuidae is the name.

W.T.M. Forbes

(The question of this family name is so important that, in order to give fairly both sides of the debate, we asked Dr. J. McDunnough to give the argument for Phalaenidae. - Ed.)

A. The matter of Phalaena versus Noctua has been dealt with very fully by Barnes and Benjamin in the Contributions, vol.5, pp.53/57, 1923. The gist of their remarks is that in the 10th edition of "Systema Naturae" Linnaeus created only three genera, viz. Papilio for the diurnals, Sphinx for the hawk moths, and Phalaena for the balance of the moths. The trouble lies in the fact that Linnaeus further subdivided the last named genus into Phalanges, one of which was termed Noctua and included the owlet moths, which led to this name being applied in the old accepted sense and Phalaena either discarded or used as a superfamily. Of recent years the International Committee of Zoological Nomenclature has ruled against the crediting of the Phalanges names to Linnaeus as subgeneric terms: this leaves the name of Phalaena as the oldest and perfectly valid generic term which must be used and applied somewhere in our system of nomenclature. Barnes and Benjamin seem to have advanced a fairly sound argument in favor of the supplanting of Noctua by Phalaena, the details of which may be studied in the above mentioned article. For this reason the change was adopted in the 1938 (N. American)check list.

J. McDunnough

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* * *

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* * *

DECEASED: Rau, Phil, Kirkwood, Missouri.

As stated on page 1 of the current volume, the News will not be issued for July-September. No.7 will be the October issue and with it will probably be the annual membership list.

F.E. Holley writes that members who were unsuccessful in purchasing Englehardt's revision of the Aegeriidae of North America (see review in News, vol.1, no.2) may obtain it free of charge by writing to: DIV. OF PUBLICATIONS, SMITHSONIAN INSTITUTION, WASHINGTON 25, D.C. In writing, ask for "U.S. National Museum Bull.190". The supply is limited.

THE LEPIDOPTERISTS' NEWS is the monthly periodical of The Lepidopterists' Society. Membership is open to anyone interested in the study of butterflies & moths. The 1948 dues, including subscription to the NEWS, are $1.50 for Regular Members and $3.00 or more for Sustaining Members. Please make remittances payable to : Charles L. Remington.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

Volume II | October 1948 | Number 7

THE BUTTERFLIES NORTH OF MEXICO

- A Society Project -

During the past months the editor of the News has received several letters suggesting that it would be advantageous to establish as a Society project the preparation of a definitive work on the butterflies of the Nearctic fauna. The two most recent attempts to do this are outdated and of relatively little use to the serious student. Seitz' monumental work, the Macrolepidoptera of the World, vol.5, is poor in many respects although some of the generic revisions included in it are excellent. Holland's Butterfly Book is outdated and does not go into sufficient detail. Of the older works Edwards' Butterflies of North America does not cover the entire fauna and is not conveniently arranged. Scudder's Butterflies of the Eastern United States is a perfect study, but is restricted to only part of the fauna.

The available knowledge has now become so extensive that there is no single entomologist today who has the capacity and the breadth of field knowledge to write singlehandedly a comprehensive study of the butterflies of the Nearctic fauna. However, if the various students of the different genera pool their resources and each member of the Society contributes from his own field experience, the Society can prepare such a study. The editor of the News has asked me to prepare for your consideration a plan for such a study. I firmly believe that if the members of the Society will cooperate wholeheartedly, we can write a "Butterflies North of Mexico" that will not be equalled for some years to come, and then only by a cooperative effort.

Before showing how this job can be done, let me first present outlines of how each family, genus, and species should be treated:

FAMILY TREATMENT

1. Name.
2. Synonymy
   a) citation and type genus;
   b) discussion of status of the name used.
3. Palaeontology (if known to science).
4. Anatomical characteristics of the family.
5. Range of the family and importance of Nearctic genera.
6. Key to the Nearctic genera.

GENUS TREATMENT

1. Name.
2. Synonymy
   a) citation and genotype of every generic name ever used with the species now considered composing the genus;
   b) discussion of the status of each name.
3. Discussion of relationship to other genera in the family.
4. Range of the genus and relationship of Nearctic species to those of other faunal regions.
5. Anatomical characteristics of the genus.
6. General bionomics of the genus
   a) peculiarities of habitat;
   b) peculiarities of habits.
7. Keys to the Nearctic species: larvae, pupae, adults.
8. Bibliography of revisions and monographs.

SPECIES TREATMENT

1. Name.
2. Synonymy
   a) citation of original descriptions relating to the species;
   b) type localities of named forms;
   c) present location of types.
3. Check list of acceptable names arranged in the order that will be followed in the discussion.
4. Detailed description of the imago following a system that has been adopted for all species of the genus.
5. Detailed description of preparatory stages:
   a) chrysalis;
   b) larval stages;
   c) egg.
6. List of food plants and citations.
7. List of parasites and predators.
8. Habits of the imago.
9. Habits of the larva.

(cont. on next page)

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NATIONAL MUSEUM

10. Variation in imago due to seasonal conditions
    a) coloration and structures;
    b) size.

11. Variation in imago due to geographic range
    a) discussion of races.

12. Distribution of the species and of its races.

13. Problems that require further study.

14. Bibliography.

15. Illustrations
    a) photographs of type(if still extant);
    b) photographs to show normal range of variation of each acceptable race;
    c) photographs of eggs, larvae, pupae;
    d) anatomical drawings useful in diagnosing the species and its races;
    e) maps showing range of food plants;
    f) map of range of species and its races.

Now that you see how fully the Nearctic butterflies should be treated in this proposed work, let me outline how the job can be done. Our membership includes practically every active collector in the area in question. Each of us knows the habits of the butterflies of our own region and probably others. Among us are a variety of taxonomic specialists that blankets nearly every genus known to fly in the faunal region.

Let me take a specific instance, say the genus Incisalia. Harry Clench has been studying this genus intensively for some time. We may call him the specialist whose job it is to prepare the manuscript on that genus. He knows the other men who are strongly interested in these butterflies. They constitute a sort of committee to decide with him which names will be admitted as species names and which as races and synonyms. Meanwhile the rest of us dig up all the field information we can on the genus in our particular areas and send it to Clench. This will be a chore, but IT IS THE SECRET OF THE JOB. We also put at Clench's disposal the loan of material in our collections. With this information and the specimens plus everything in the literature before him, our specialist then does the best job possible on the genus. When his revision is completed, the several co-specialists read and criticize it and Clench makes what changes he feels are necessary. Then one or two of us who are not specialists take a look at the job to see if we can understand what it is all about. After any ambiguous statements are modified, the manuscript is ready for final editing for the printer.

This will take time-- five or ten years. It will take the full cooperation of the membership. There will be no room in it for personal and petty jealousy. It can be done. Shall we do it? Let me have your answer on the enclosed printed post card.

F. Martin Brown
Coordinating Editor for
"Butterflies North of Mexico"

PROCEDURE IN TAXONOMY - IV. SYMBOLS

In entomological writings several symbols appear frequently enough so that it is worthwhile to give their meanings.

1. ♀ Female.

2. ♂ Male.

3. ⚥ Hermaphrodite (bisexual).

4. ! Following a citation of data means "specimen examined".

5. x Between two names means hybrid (e.g., Platysamia cecropia x P. columbia). If parents are known, the female is always written preceding the x. Hybrids may also be written as fractions (e.g., $\frac{\text{Papilio ajax}}{\text{Papilio machaon}}$).

6. ? When placed immediately after the generic name means doubt as to correct generic assignment; when placed after the specific or racial name, expresses doubt only of specific or racial correctness; when placed in front of the generic name, indicates doubt of whole citation. (e.g., Sphinx? ligustri, Speyeria diana?, ?Lycaena dispar).

7. ≡ Means "equals" or "identical with". A synonym is usually placed in parentheses and preceded by the sign of equality. [e.g., Vanessa (≡ Pyrameis) cardui, Clossiana toddi (≡ bellona), Phalaenidae (≡ Noctuidae)].

8. ( ) Used to enclose the subgeneric name [e.g., Hemiargus (Echinargus) isola alce]. If placed around the describer's name, it means it was originally described in another genus [e.g., rapae was described by Linné in the genus Papilio, so the citation must now read: Pieris rapae (Linné)]. See also its use for synonyms in 7, above.

9. F_1 Signifies the first generation of offspring of a cross with known parents. (F_2 signifies offspring of a cross-mating of brother and sister F_1. F_3 signifies offspring of a cross of brother and sister F_2).

C.L.R.

* * *

Entomologishes Nachrichtenblatt is a monthly mimeographed periodical similar to vol.I of the Lep. News. It deals largely with Lepidoptera. Now in its second volume, it is written entirely in German. The annual subscription fee is 3 francs (Swiss), or the editor will exchange subscriptions for living pupae and publications on Lepidoptera. Address: A. Lüthi, Inneres Sommerhaus, Burgdorf, SWITZERLAND.

*

Professor Kenneth J. Hayward, of the Universidad Nacional de Tucuman, Argentina, writes that he is spending "about ten months to a year" at the British Museum of Natural History in London, doubtless in working out taxonomic problems related to his huge monograph of the Rhopalocera of Argentina.

*

Sr. José Oiticica F?, of the Museu Nacional of Brazil, is in the U.S.A. studying Saturniidae, aided by the award of a Guggenheim Fellowship.

A SHORT REPORT ON THE DAMAGE CAUSED TO LEPIDOPTEROLOGY DURING AND AFTER THE PACIFIC WAR IN JAVA AND MALAYA

by Dr. A. Diakonoff
Zoölogisch Museum, Buitenzorg, Java

At the request of the Editor of the News we give a short account of the damage caused to lepidopterology in Java and Malaya.

JAVA

The Zoological Museum of the Botanic Gardens at Buitenzorg (Zoölogisch Museum van 's Lands Plantentuin) was very fortunate in saving its entire collections, among which is an extensive collection of Lepidoptera of the Malay Archipelago. During the Japanese occupation a few members of the original scientific Dutch staff and of the native personnel were kept on their posts and were able to look after the collections. Only a small part of insect collections has been damaged by lack of disinfesting and drying chemicals at the end of the war.

In the same way is saved an important collection of bred insects of the Institute for Plant Diseases and Pests of the General Agricultural Experiment Station at Buitenzorg.

The Japanese who liked to play the role of the "protectors of science" brought several private collections in West Java to the Buitenzorg Museum, and saved them in this way from destruction.

The greatest damage to private collections has been done during the troubles after the capitulation of the Japanese in 1945-47, by senseless barbaric looting and arson.

We lost the following lepidopterists:

Dr. Edw. R.J. JACOBSON, the famous collector of insects, died in an internment camp in 1945. His collections of Lepidoptera from Sumatra are chiefly in the Leiden Museum.

F. DUPONT, an excellent collector and specialist of Malay Sphingidae, was killed in action during the invasion of Celebes in 1942. His collection of Sphingidae is in the Agricultural College in Wageningen, Netherlands. His collections of other Lepidoptera and insects from Celebes are in the Buitenzorg Museum.

J. OLTHOF, Assistant Entomologist at the Buitenzorg Museum, a young but zealous collector and breeder of Macrolepidoptera, died of consequences of imprisonment in 1945. His collections are in the Buitenzorg Museum.

J.P. ROSIER, collector, was drowned, his ship being torpedoed during a draft of prisoners of war to Sumatra in 1943. His collection is purchased by the Buitenzorg Museum. Contains important material from very little known localities in South Sumatra.

Of the important collections which are lost may be recorded an extensive collection of naturalia, especially Lepidoptera from East Java, but also from many other islands brought together during many years by A.M.R. Wegner, at that time professional collector, whose small private museum in Tengger Mountains, East Java, was burnt to the ground by "extremists" as recently as Sept. 15th, 1947.

An important collection of Lepidoptera (especially Pieridae) and Coleoptera from Bali Id., from extreme East Java, from Lombok Id. and from Celebes by J.P.A. Kalis, at that time private collector, was destroyed by looters in 1946 in East Java.

A collection of Lepidoptera of Java by H. Lucht, estate-manager, was lost by the same agencies in Idjen Mountains, East Java.

Furthermore, private entomological libraries were almost entirely lost. Luckily, the entomological literature in official libraries suffered but little damage.

MALAYA

The Raffles Museum at Singapore suffered hardly any damage. It contains only a small show collection of Lepidoptera.

The Federated Malay States Museum at Kuala Lumpur, Selangor, has been very unfortunate. It has been hit by a miss during a bombardment of the railway station nearby in 1944, and the building was totally destroyed together with the collections of higher animals. A part of the insect collection, however, escaped destruction, but Lepidoptera were very heavily damaged. This is the more deplorable as this collection contained valuable material of Rhopalocera of the Malay Peninsula and unique collections of the expedition to peninsular Siam and to Mt. Kinabalu, North Borneo, by Pendlebury and others.

Mr. H.M. Pendlebury, Director of the above Museum, specialist of the Malay Rhopalocera, was imprisoned by Japanese in Singapore and died of the consequences in Ceylon in 1945, on his way back to England.

In this place we may remember the late Dr. A. Steven Corbet, Lepidopterist of the British Museum, zealous and capable specialist of the Malay Rhopalocera, who died unexpectedly in Tilehurst, England, on May 17th, 1948, in the middle of his critical 2nd edition of Corbet & Pendlebury's "Butterflies of Malay Peninsula."

(Note:)- Australian Microlepidoptera.

We learned recently that the important collection of Australian Microlepidoptera by the late Dr. A. Jefferis Turner was bequeathed to the Council for Scientific and Industrial Research, Canberra, Australia. It is a relief to know that there is a successor to Dr. Turner. Mr. Ian F.B. Common is going to continue the studies on Australian Microlepidoptera with a revision of Tortricidae and Eucosmidae.

REPORT ON WAR DAMAGE IN EUROPE - III.

by S.G. Kiriakoff
Ghent, Belgium

The following are the data which I have been able to collect regarding the war losses to lepidopterology in the formerly occupied West European countries, France and Belgium. I have to thank Messrs. Jean Bourgogne, of the Paris Museum, and Abel Dufrane, Curator, Zoological Museum, Mons, Belgium, for the following information.

1. FRANCE. Most of the important collections have not directly suffered, although, as M. Bourgogne says, there has been some damage due to lack of care as the result of fuel shortage and similar causes. Fortunately, this has not been the case with the Paris Museum which contains the most important collections of France. During the war, the most valuable specimens were carefully put in security and the collections have been since adequately cared for.

Among the public collections lost, are that of the University of Caen and that of the Abbeville Museum; further, that of the Société Entomologique du Nord de la France, Cambrai. Private collections lost or heavily damaged: those of Morault in Nantes; of Frémont in Bordeaux; of Dervaux in Riom.

Lepidopterists deceased: Le Magnan, killed in action; Georges Dorant, died of illness in Indo-China with General Leclerc; F. Le Cerf, of the Paris Museum, died in 1944 after being weakened by war privations; G. Praviel, of the Institute of Agronomy, Paris, died of the same cause.

2. BELGIUM. Fortunately, there is no damage to report concerning the public collections, except partly those of the University of Louvain, and I am not aware of any damage to the Lepidoptera collections there.

Among lepidopterists, F. Derenne was killed during an air raid together with several members of his family, but a large part of his private collection-- the finest in Belgium--was saved from the ruins of his home and is now at the Brussels Museum. Other large private collections lost are those of Colonel Sandras, Ostend, and of Laurent Sarlet, Ensival. The latter collection was destroyed during the Von Rundstedt ("Bulge") offensive, December 1944, and is probably the last one lost during the war in West Europe.

For completeness' sake, it may be added that the well known Belgian phylogenetist Auguste Lameere died during the occupation. He was an old man, being born in 1864, and it is possible that war privations were partly responsible for his death. Prof. Lameere was the author of two classifications of the Lepidoptera, chiefly built up from a phylogenetical point of view.

IMPORTANT COLLECTIONS

1. LEPIDOPTERA IN THE CARNEGIE MUSEUM

About half of the specimens--approximately a million of them--in the Section of Entomology of the Carnegie Museum are Lepidoptera. These include a smattering of moths and butterflies from all over the world, mainly the result of the late William J. Holland's desire to have in his collection a specimen of each known genus. From the standpoint of distribution, our best representation is from western Pennsylvania. Of the North American fauna we also have excellent collections from the far North, the Rocky Mountain regions and Florida. From the Isle of Pines in the Antilles we have a large collection and a very complete one from Jamaica. South America is represented best by Bolivian material with central Brazil, the Guianas, Venezuela and Colombia only slightly behind. We have a tremendous West African collection, mainly from the Cameroons, but are fairly weak in South African specimens. The European collection is weak; the Asiatic is strong in Manchuria and Japan and particularly in butterflies from the high altitudes of Central Asia. India is copiously but spottily represented; Malaya, fair; Java, Buru, Dutch New Guinea and Borneo, moderately so. With the exception of a comprehensive local collection, we have relatively few Microlepidoptera.

Among special collections, perhaps the Edwards Butterfly Collection is the most famous and most controversial. The sphingid collection ranks as one of the world's leading accumulations of these insects. There are 42,000 specimens, lacking only about forty of the named forms. Included are the collections of B. Preston Clark, Charles Oberthur, A. Hume, Boisduval, Leconte, Wm. J. Holland and others. There are 807 sphingid types. The Parnassius collection assembled by Dr. Andrey Avinoff is the leading one of its kind in this country. Although the common European Parnassius apollo, with its hundreds of forms, is almost completely neglected, the rare Central Asiatic species are all present in good series. The Lindsey collection of Hesperiidae is deposited here. We have the only complete collection of the Central Asiatic genus Karanasa in the world.

All of these collections are combined and arranged by faunal regions in accordance with the latest available check lists, with special labels showing the original collection. There are about 2700 type specimens, including types and paratypes of good species and synonyms.

There have been few lepidopterists on the staff of the Carnegie Museum. Dr. William J. Holland was the dominant personality from about the turn of the century until his death in 1932. Dr. Andrey Avinoff, the Russian expert on Central Asiatic butterflies, joined the staff in 1922, and though soon made Director of the Museum, maintained a very active interest in the department. The present curator was appointed in 1941, after a dozen years of sporadic volunteer work. Dr. Richard Fox, formerly with the Reading Museum, is now Research Associate and is finishing a monograph of the family Ithomiidae.

Walter R. Sweadner
Curator of Insects
Carnegie Museum
Pittsburgh, Pa.

METHODS FOR COLLECTING BUCK-MOTHS (HEMILEUCA, SATURNIIDAE)

by David L. Bauer
Yuma, Arizona

The entire family Saturniidae has long been of special interest to collectors, partly because of the great size and beauty of many of the species. However, the Buck-moths, as the species of Hemileuca are commonly called, are overlooked by many collectors. This may be because the majority of the species are found in the western part of the U.S.A. where resident collectors are few and far between, or it may be because of the late emergence of the adults in the fall of the year. Due to the fact that they occur in scattered colonies, little is as yet known about the precise range of most of the species. In habitat they vary from the bogs of Maine to the deserts of Arizona, but in general each species is limited to a rather narrow set of ecological factors. This no doubt is partly responsible for the usually spotty distribution, and for the fact that some species are still almost unknown and are represented only in the largest collections.

The life histories of the various species of Hemileuca are in general similar: the winter is usually passed in the ova, and the larvae hatch when the leaves come out on the foodplant, and by early summer the pupal state is entered, with the adults emerging in the fall or winter. Much information is needed in regard to the habitat and habits of each species, especially the food-plants and specific dates for the appearance of the adults and larvae in the various parts of their range. Some species

(cont. on next page)

FIELD TABLE FOR HEMILEUCA OF U.S.A.

SPECIES	DISTRIBUTION	DATES FOR COLLECTING IMAGO	LARVA	FOODPLANT
H. electra Wgt.	Coastal plains and mts. of S. Calif.	Sept.-Oct.	Mar.-May	Wild Buckwheat (Polygonaceae)
race clio B. & McD.	Desert slope of mts. and desert mts. of S. Calif. and cent. Ariz.	Sept.-Oct.	Mar.-May	Wild Buckwheat
H. juno Pack.	Ariz., s.e. Calif., Nev., Utah, reported from Idaho	Sept.-Jan.	Apr.-June	Mesquite (Prosopis)
H. grotei G. & R.	Mts. of New Mexico, e. Ariz.	Sept.-Nov.	June?	Oak (Quercus)
race diana Pack.	Cent. Texas	Sept.-Oct.	Apr.-June	Oak
H. maia Dru.	Most of U.S.A. east of Rocky Mts.	Sept.-Dec.	Apr.-June	Oak, Willow, Cherry (Prunus), Hazel (Corylus)
H. lucina Hy.Edw.	Maine	Sept.	Apr.-June	Spirea
race latifascia B. & McD.				Willow (Salix)
H. nevadensis Stretch	Most of U.S.A. west of Rocky Mts.	Sept.-Nov.	Apr.-June	Cottonwood (Populus), Willow
race californica Wgt.	S. Calif.	Oct.-Dec.	Apr.-June	Cottonwood, Willow
H. burnsi Wats.	Desert slope of mts., desert mts. of s. Calif., Nev., Utah, Ariz.	Sept.-Nov.	Feb.-Apr.	Spinosum?
H. neumoegeni Hy.Edw.	Higher desert mts. of eastern Mojave Desert and cent. Ariz.	Sept.-Nov.	Mar.-May	Wild Buckwheat
H. tricolor Pack.	S.e. Ariz., s.w. N.Mex.	Feb.-July	July?	Palo Verde (Cercidium)
H. oliviae Ckll.	New Mexico, Colo.	Oct.	?	?
H. sororius Hy.Edw.	Baja Calif., s.e. Ariz., possibly s. Calif.	?	?	?
race hualapai Neum.	?	?	?	?

occupy the same area but have different food-plants and do not have the same habits or fly at the same time. Species that have a wide range north and south may emerge in August or September in the north and as late as December in the south. Likewise the larvae are to be found at widely different times of the year with varying altitude and latitude.

Hemileuca are not hard to collect once a colony is located. The adults of all but one or two species found in the U.S. fly in broad daylight and can be netted the same as butterflies. There are two Southwestern species, tricolor and oliviae, that fly at night and may be caught at light. Most specimens netted or taken at light are males. Where the males are flying thickest females may usually be found clinging to the grass, twigs of bushes, or trunks of trees. This is the best way to secure good specimens of females, for usually they have not yet flown and are in perfect condition. Males may also be brought within netting reach by placing a female in a good locality, and catching the males as they come.

The fact that the winter is passed in the ova by all but one species would give ample time for the exchange of ova by collectors who are interested in rearing their own specimens. The ova are laid in clusters on the twigs or stems of the food-plant. These egg masses may be found with a little searching during the winter when the leaves are off the trees and shrubs. The eggs may be secured with much less effort by enclosing the female. If the female is given considerable room in which to fly around more eggs will be secured. The females will oviposit without the presence of the food-plant, but it is best to place a few dried twigs in the enclosure.

Collecting and rearing the larvae is the most successful method of securing good specimens. It is well to look for larvae while they are still small, because thet are less likely to be infested with parasites. They are much easier to secure when small as they are gregarious during the first, second and part of the third instars. The black clusters of larvae are fairly easy to see as one looks over the food-plants in search of them. A word or two more should be said in regard to parasitism. Among mature larvae it is nearly always high, although infestation seems to run in cycles reaching a peak and then dropping off sharply. In 1947 Hemileuca juno larvae were 75 to 80% infested, while this year ('48) parasitism was only 14% in larvae collected from the same colony.

At times it is profitable to search for the pupae in dead leaves and debris in the vicinity of the food-plant. The places where one is most likely to find pupae are: under logs, boards and rocks, at the bases of trees, and in litter under trees and shrubs. Rarely are the pupae buried in the ground, but are usually enclosed in a meager, loose cocoon in or at the bottom of the layer of litter.

To help in collecting the various species the accompanying table has been prepared. It is hoped that this information will be of aid in showing when and where to collect.

Medical Journal of Australia

ALFRED JEFFERIS TURNER (1861-1947)

By the passing of Dr. A. Jefferis Turner on Dec. 29, 1947, entomology suffered the loss of the dean of Australian lepidopterists.

Turner trained as a physician at the London University College, receiving his M.D. in 1886. Three years later he went to Australia. A brilliant record as a pioneer in public health and children's medicine made him a well-known and respected figure, and he has been termed "Queensland's greatest physician". His retirement in 1937 made possible his concentration on entomology during the last ten years of his life, although much of his entomological work was done during his active professional career.

Dr. Turner began to collect insects when a young man, specializing in butterflies, but later turning to moths as a more challenging group. His paper on Microlepidoptera in 1894 was followed by about 100 entomological articles. Descriptions of hundreds of new species and genera of moths were only part of his contribution, for he had a keen interest in evolution and classification. His penultimate paper was a noteworthy classification of Lepidoptera (see Lep.News 2: p.65). Turner's papers were orderly and careful, although by modern standards of taxonomic descriptions they lack important material such as comparisons and figures. His knowledge of Greek and Latin made his names for new species and genera unusually meaningful, and it was his habit to state the derivation.

His large and valuable collection is now deposited in the museum of the Division of Economic Entomology (Council for Scientific and Industrial Research) at Canberra. He was a Fellow of the Royal Entomological Society of London, a member of the Royal Society of Queensland, the Linnean Society of New South Wales, the Lepidopterists' Society, and others.

Dr. I.M. Mackerras wrote of Turner: "He lived a full life, he completed the task he set himself, and he left... the results of a vast amount of original work clearly and systematically presented, so that future workers will not have to delve over the old ground again. ... And a memory will remain...of kindly gentleness and whimsicality, which will still, for a while be talked about when entomologists gather together." J.E.R.

Mary E. Murtfeldt

BRIEF BIOGRAPHIES

15. Mary Esther Murtfeldt (1839-1913)

The appointment of Prof. C.V. Riley, in 1868, as entomologist of the State of Missouri marked a turning point in American entomology. Economic entomology then became a recognized profession. An increasing number of states realized the need for these services and by the end of another decade the federal government in Washington established the Division of Entomology in the Department of Agriculture. It early became evident that Riley had considerable genius for organizing this work. He soon enlisted the help of certain persons having some knowledge of entomology to assist him in his duties. Foremost among these assistants was Miss Mary Esther Murtfeldt, an amateur entomologist who resided at Kirkwood, Missouri. L.O. Howard says of her: "she was an educated, charming lady, who met Prof. Riley when he first went to Missouri in 1868 and who was much influenced by him in her entomological studies."

Mary Esther Murtfeldt, the eldest daughter of C.W. and Esther Murtfeldt,was born in New York City, August 6, 1839. There, as a child, she suffered a serious illness which left her with a paralysis,so that in all her later life she was restricted in her walking. While she was still quite young the family moved to Rockford, Ill., where Mary attended school and later Rockford College. In 1869 the family moved to St. Louis, Mo., and two years later to Kirkwood, a suburb of St. Louis, where she lived the rest of her life.

Miss Murtfeldt's interest in entomology was chiefly with the Microlepidoptera, of which she had quite a considerable collection. These were nearly all bred specimens. Due to her physical handicap, she was not able to go out into the field to collect. The family had a beautiful garden where she could sit and observe while her fathers and sisters did the work. Members of her family collected insects for her to some extent, but she soon found that insufficient toward making an orderly and scientific collection. Consequently she succeeded in interesting a number of boys to go out into the fields and woods and, having been instructed on how and where to find the eggs and larvae, they brought them to her for rearing in her home laboratory.

Miss Murtfeldt collaborated with C.V. Riley, then State Entomologist of Missouri, from 1876 to 1878, and was Acting State Entomologist from 1888 to 1896. She was a field agent of the Division of Entomology of the United States Department of Agriculture from 1880 to 1893. During these years her work consisted principally of studying the life history of insects, especially the Microlepidoptera, which she was able to do on the study table of her home laboratory. She described 18 new species of moths, 7 of which have since been placed in the synonymy.

Miss Murtfeldt began writing on entomological subjects in 1870, when she was 31 years old. It was then that she wrote "The Firefly", "Life of a Butterfly" and "The Preying Mantis", which were published in Little Corporal Magazine. In 1873 she wrote "Women and Science", published in the Rural New Yorker, and in 1874 she read "Value of Natural Science for the Education of Women", before the Women's Congress in Boston. Then followed a number of papers in the scientific journals, many of them on insect life-histories. In 1890 appeared the second series of "Stories of Insect Life", prepared by Miss Murtfeldt in collaboration with Clarence M. Weed.

In 1891 she wrote a book entitled "Outlines of Entomology, prepared for the use of Farmers and Horticulturists, at the Request of the Secretary of the State Board of Agriculture and the State Horticultural Society of Missouri", published at Jefferson City, Missouri. This was a popular work of 130 pages prepared with a view of introducing farmers and horticulturists to the science of entomology. The object of the author was to produce a perfectly elementary work. She goes carefully over the subject of the general structure of insects, defining the terms commonly in use, treats of the transformations and the classification and names, and in short chapters discusses the main forms of each of the orders. Some 50 figures, nearly all by Riley, are given in the text.

Many honors were bestowed upon Miss Murtfeldt. She was a Fellow of the American Association for the Advancement of Science and in 1890 was elected Vice President of the Entomological Club of this organization. She was an Honorary Member of the Academy of Science of St. Louis. She disposed of her collection of Microlepidoptera to Cornell University during the later years of her life. At the time of her death, which occurred on February 23, 1913, at the age of 74, she was associate editor of "Farm Progress", a bi-weekly journal issued by the St. Louis Republic.

Edwin P. Meiners, M.D.

Correction: In paper #43 of the News (2: p.19) it should ne noted that the fluid in Nepenthes pitchers is a digesting fluid secreted by the plant and not rain water, as we had stated. Dr. Diakonoff kindly pointed out the error. Listings 324, 325, 343 (below) were contributed by Dr. Diakonoff.

310. Beirne, Brian P., "Eublemma astrina, E. parva and other Lepidoptera in Ireland in 1947." Entomologist, vol.81: pp. 132-136. June 1948.

311. Bell, Ernest L. & William P. Comstock, "A New Genus and Some New Species and Subspecies of American Hesperiidae(Lepidoptera, Rhopalocera)." Am. Mus. Novitates, no.1379: 23 pp.,16 figs. 28 June 1948. Describe as new: Chioides catillus subsp. churchi (Jamaica), Proteides mercurius subsp. vincenti (St. Vincent) & subsp. sanchesi (Hispaniola), Polygonus manueli (Brazil)(also north to Florida), P. manueli subsp. punctus (St. Vincent), Echelatus sempiternus subsp. dilloni (Hispaniola), Achylodes janus (Jamaica), genus Burca (type- Nisioniades concolor H.-S.), B. stillmani (Dominican Rep.), B. hispaniolae (Hispaniola), Ephyriades dominicensis (Dominica), E. brunnea floridensis (Key Largo, Fla.), Copaeodes stillmani (Dominican Rep.), Atalopedes nabokovi (Haiti). Figure ♂ genitalia of manueli, dilloni, janus, B. stillmani, hispaniolae, dominicensis, C. stillmani, nabokovi, and similar spp. not new.

312. Bell, J.H. & P.J., "West Hertfordshire Light Trap, 1947". Entomologist, vol.81: pp.105-106. May 1948.

313. Berger, Lucien A., "A Colias New to Britain (Lep. Pieridae)." Entomologist, vol. 81: pp.129-131. June 1948. Records his newly discovered Colias similar to C. hyale from several localities. Mentions host plant as Hippocrepis comosa. Summarizes differences from larva and adult of C.hyale. Considers correct name to be probably C. alfacariensis, an aberrational name.

314. Betz, J.-T., "Une nouvelle aberration de Melanargia." (In French). Rev. franç. Lépid., vol.11: pp.297-298, 2 figs. Apr.1948.

315. Blackie, J.E.H., "The English Colonies of Erebia aethiops Esper." Entomologist, vol.81: pp.107-109. May 1948.

316. Breland, Osmond P., "Two Migrations of the Snout Butterfly, Libytheana bachmanni larvata (Strecker). (Lepidoptera: Libytheidae)." Ent. News, vol.59: pp.128-131. May 1948. Records westward and southeastward migrations of larvata in Texas and reports extensive feeding on sticky exudate on gall-wasp (Cynipidae) galls on oaks.

317. Bryk, Felix, "Neue Formen von Eudia pavonia (L.) aus Schweden. (Lep.: Saturniidae)." (In German). Entomologisk Tidskrift, vol.69: pp.142-144, 3 figs. 5 Aug. 1948. Figures clearly and describes as new "forms" of E. p. pavonia: f. postrosacea (Uppland) and f. trafvenfelti (Wästerbotten) and E.p. ssp. lappmarchica (Lappland) each based on 2 or less specimens!

318. Clark, Austin H., "Classification of the Butterflies, with the Allocation of the Genera Occurring in North America North of Mexico." Proc. Biol. Soc. Wash., vol.61: pp.77-81. 16 June 1948. See summary in Lep. News 2: 73.

319. Corbet, A. Steven, "The 'Preliminary List of the Rhopalocera of Borneo' by W.B. Pryer and D. Cator." Ann. & Mag. Nat.Hist., vol. 14: pp.415-420. 2 Mar. 1948. Analyses this very rare 1894 paper, reproducing original descriptions. Sinks as races: Danais tuak (under D. plexippus), Charaxes saida (under Polyura jalysus), Euthalia borneensis (under E. aconthea), Ergolis ahmat (under Ariadne merione), Ergolis telok (under Larina castelnaui), Atella creaghana(under Vagrans egista). Euripus kabeli is the ♀ form of Idrusia nyctelius pfeifferae. Sinks as synonyms: Euploea susah (under E. sylvester tyrianthina), Herona arborescens (under H. sumatrana schoenbergi), Neptis fulva & kechil (under Neptis n. nata), N. bahalla (under N. d. duryodana), Abisara skertchlyi (under Zarax teneta), Poritia dorothiana (under Cyaniriodes l. libna). Lists as NOMINA NUDA: Elymnias annea; Euthalia halimah, vesta, abayah, lakayah.

320. Dannreuther, T., "Migration Records,1947." Entomologist, vol.81: pp.73-83, 110-117. Apr.May 1948. Summarizes records for British Isles. Remarkably numerous in 1947 were: Colias croceus, Macroglossum stellatarum, Rhodometra sacraria.

321. De Laever, E., "Espèces nouvelles pour la faune belge: Coenobia rufa Haw." (In French). Lambillionea, vol.48: pp.18-20. Apr. 1948. Redescribes genera Coenobia, Arenostola, and Archana. C. rufa new record for Belgium.

322. de Puységur, K., "Contribution à l'étude des Rhopalocères de l'Hérault." (In French). Rev. franç. Lépid., vol.11: pp.306-310. June 1948. Records 12 spp. of butterflies from l'Hérault.

323. de Toulgoët, H., "Chasses de nuit aux Cols du Galibier et du Lautaret (Hautes-Alpes)." (In French). Rev. franç. Lépid., vol.11: pp.265-272. Apr. 1948. Account of collecting rare moths at light in the Alps. New record for France: Standfussiana wiskotti.

324. Diakonoff, A., "Waarnemingen over Indische Insecten." (In Dutch). Tijdschrift v. Ent., vol.88: p.xlviii. 1 Oct. 1947. Observations on myrmecophile Lycaenidae and on Epipyropidae were made in prisoner-of-war camps. In Java larvae and pupae of Lycaenestes emolus javanus Feld. and of Amblypodia centaurus amazona Pag. were observed "nursed" by the rapacious and dreaded rang-rang ant, Oecophilla smaragdina F. Hypolucaena erylus God. is possibly also associated with this ant. In Sumatra epipyropid larvae were found on the abdomen of a pyropid, but could not be reared. This is probably the first record of Epipyropidae from the Malay Archipelago. (A.D.)

325. Diakonoff, A., "Notes on Tortricidae from the Malay Archipelago with description of a new species (Lepid.)." Tijdschrift v. Ent., vol.88: p.340. 1 Oct. 1947. A tortricid, Procalyptis liberatrix, is described from Christmas Island. (A.D.)

326. dos Passos, Cyril Franklin, "The Occurrence of Anthoxanthins in the Wing Pigments of some Nearctic Oeneis (Rhopalocera: Satyridae)." Ent. News, vol.59: pp.92-96. Apr. 1948. Applied Ford's (1941) technique for finding anthoxanthins without injuring the specimens. Apparently tested all N.American

spp. of Oeneis, finding the pigment only in the uhleri and taygete groups. Of the former, all spp. and subspp. had anthoxanthins, but only ivallda in the taygete group reacted positively. Dos Passos therefore raised ivallda to full specific rank, rather than a race of chryxus.

327. Dufrane, Abel, "A propos des races françaises de Parnassius apollo." (In French). Rev. franç. Lépid., vol.11: pp.295-296. Apr. 1948.

328. Fox, Richard M., "Roswellia, a New Genus of Ithomines (Lepidoptera)." Ent. News, vol. 59: pp.131-132. May 1948. Describes new genus Roswellia (generotype- Athesis acrisione) with only one species. This leaves Athesis also monotypic. Named for Roswell C. Williams, Jr.

329. Gozmány, Lásló, "Az Ócsai-turján lepkeritkaságai" ("Lepidopterological rarities of the Torfmoor of Ócsa.") (In Hungarian with English summary). Folia Entomologica Hungarica, vol.2(s.n.):pp.60-62. 1947. Records various moths from central Hungary; describes new aberration of Boarmia punctularia.

330. Gozmány, L.,"Breeding Perigrapha cincta F. (Lepidopt.)." (In English). Fragmenta Faunistica Hungarica, vol.10: pp.20-21. 1947. Reports 5 forms reared from batch of eggs of P. cincta.

331. Gozmány, L., "New data to the Macrolepidoptera Fauna of Budapest with the description of a new aberration of Euplexia lucipara L." (In English). Fragmenta Faunistica Hungarica, vol.10: pp.55-58, 1 fig. 1947. Records of 15 moths and a skipper. Photo of new aberration.

332. Herbulot, Claude, "Atlas des Lépidoptères de France, Belgique, Suisse, Italie du Nord. Fascicule II: Hétérocères.", (In French). 145 pp., 16 pls. col. Editions N. Boubée & Co., Paris. 1948. See note on p.88 of this issue of the Lep. News.

333. Janmoulle, E., "Espèces nouvelles pour la faune belge: Microlépidoptères." (In French). Lambillionea, vol.48: pp.20-21, 33-34. Apr.,June 1948. Records: Acalla abietana, Steganoptycha subsequana, Hypatima inunctella, Coleophora sylvaticella, Euplocampus anthracinalis, Grapholitha gemmiferana, Anacampsis (Tachyptilia) betulinella.

334. Kiriakoff, S.G., "Taxonomie et Spéciation. La semi-espèce et la super-espèce." (In French). Bull. & Ann. Soc. Ent. Belgique, vol.84: pp.64-70. 1948. Discusses semi-species and ultra-species (see Lep. News 2: pp.15,16), giving as examples of the former: (a) Glaucopsyche melanops, paphos and charybdis; (b) Cupido argiades, alcetas and decolorata; (c) Hydraecia oculea (9 genitalic forms).

335. Le Marchand,S., "Stigmella(Nepticula)prinophyllella LeMd. est synonyme de Nepticula haraldi Soffner." (In French). Rev.franç. Lépid.,vol.11:pp.297-298,2 figs. Apr.1948.

336. Le Marchand, S., "Tineina - Les Oecophoridae." (In French). Rev. franç. Lépid., vol.11: pp.284-291. Apr. 1948. Summarizes characters of family and subfamilies (Oecophorinae, Scaeosophinae, Eulechriinae, Philobotinae, Depressariinae). Gives key to the 24 French genera.

337. Le Marchand, S., "Une petite question de Nomenclature." (In French). Rev. franç. Lépid., vol.11: pp.310-312. June 1948. Discusses Law of Priority and points out that it is unavailable for names erected for galls and mines whose causative insect was unknown. As an example of application of this principle Le Marchand gives Nepticula pseudoplatanella Weber (nec Skala). A scholarly article!

338. Muschamp, P.A.H., "Fusio (Switzerland) as an Entomological Centre." Ent.Mon.Mag., vol.84: pp.106-108. May 1948. Took 7 hybrids of Parnassius delius and apollo.

339. Oiticica F?, José, "Sôbre a Genitália das Fêmeas de Hepialidae (Lepidoptera)." (In Portuguese). Summa Brasiliensis Biologiae, vol.1: pp.384-428, 12 figs. May 1948. Describes female genitalia of Hepialus humuli (Belgium) and Phassus gigantea (Brazil) and gives superb photos of dissections. Finds previous work incorrect and that Hepialidae actually have separate vulva and ovipore, but that both are on the ninth segment. Maintains that this is an intermediate step between the very primitive (monotreme) Lepidoptera and the higher (diplotreme) groups. Existence of such an intermediate had been doubted by Williams after similar studies of other groups.

340. Picard, J., "Pyrgus (Pyrgus) malvae L." (In French). Rev. franç. Lépid., vol.11: pp. 272-283,2 figs.,pl.15. Apr.1948. Concludes that malvoides is undoubtedly a race of malvae, and ponticus and melotis almost certainly are also mere races. Summarizes knowledge of genitalia, biology, distribution. Believes Hesperiidae, esp. Pyrgus, do not travel significant distances or cross large bodies of water.

341. Querci, Orazio, "Notes on Satyrus (Melanargia) arge, Sulz. and S. ines, Hoffgg." Ent. Rec. & Journ. Var., vol.60: pp.57-58. Apr. 1948.

342. Sarlet, Laurent, "Les Géomètrides à Femelles Aptères." (In French). Faune de la Belgique (Les Naturalistes Verviétois), 150 pp., 25 pls. 1948. Detailed account, with descriptions, specific differences, synonymies, references, and photos of Geometridae with wingless ♀♀ occurring in Belgium: Alsophila aescularia, A. quadripunctaria, Operophtera fagata, O. brumata, Theria rupicapraria, Erannis bajaria, E. leucophaearia, E. aurantiaria, E. marginaria, E. defoliaria, Phigalia pedaria, Apocheima hispidaria, Nyssia zonaria, Poecilopsis pomonaria. Numerous biological notes. A very fine paper!

343. Toxopeus, L.J., "On the borer moths Zeuzera coffeae Nietn. and Z. roryeyanea Wlk. (neuropunctata Gaede) (Lep. Cossidae, Zeuzerinae)." Treubia, vol.19: p.167. 1947. With the help of extensive bred material the author discriminates these two species, which are dangerous borers of cultivated trees in Java, and describes a new subspecies from Java: Z. coffeae vireus. (A.D.)

344. Turner, A. Jefferis, "A Review of the Phylogeny and Classification of the Lepidoptera." Proc. Linnean Soc. N.S. Wales, vol.71: pp.303-338, 96 figs. 30 Apr. 1947. See review in Lep. News 2: 65.

345. Williams, L.H., "Notes on the Lepidoptera occurring in the Reading District during 1947." Ent. Rec. & Journ. Var., vol.60: pp.44-45. Apr. 1948.

COLLECTING SPHINGIDAE IN JAMAICA, 1948

In connection with a piece of work I am doing with the Institute of Jamaica, at Kingston, Jamaica, I spent the month of June 1948 collecting there.

We are trying to secure a good series of all the species of Sphingidae common to southern Florida, Jamaica, the Lesser Antilles including Trinidad, and northern South America, especially Venezuela and Colombia. We believe that a study of these series may throw some light on speciation, on the origin of certain species and variations, and may be another link in the belief that Jamaica was once a part of the North American land mass and Trinidad and the southern Antilles may have been a part of the South American continent.

I did most of my collecting over flowers in the Hope Gardens near Kingston, in the hour of dusk and first fallen dark, about 7-8 in the evenings. During 21 evenings spent in the Gardens, which lie on a plain completely surrounded by mountains, I was able to secure 24 of the possible 33 species of Sphingidae reported from Jamaica. The most numerous species, rating almost as pests, were Celerio lineata, Xylophanes tersa, Herse cingulata. Certain moths such as Pachylia ficus and P. syces insularis came for nectar along with the hummingbirds while it was still light. While we were there the moon rose full over the flowers but did not seem to check the flight as I feared. The lovely P. brontes was very abundant during the early part of my stay while the whole genus Erinnyis came only in the latter part of the time. I was fortunate in securing two specimens of Cocytius vitrinus, up to this time reported only from Cuba. Also Pachylia syces insularis had not been recorded at the Institute since about 1888. The species taken were:

Herse cingulata (Fabr.)
Protoparce brontes (Drury)
  sexta jamaicensis Butler
  rustica (Fabr.)
Cocytius antaeus (Drury)
  duponchel (Poey)
  vitrinus Rothschild & Jordan
Pachylia f. ficus (Linné)
  f. aterrima Bonninghausen
  syces insularis Rothschild & Jordan
Protambulyx strigilis (Linné)
Amplypterus gannascus (Stoll)
Erinnyis ello (Linné)
  alope (Drury)
  obscura (Fabr.)
  jamaicensis
  crameri (Schaus)
Grammodia caicus (Cramer)
Epistor l. lugubris (Linné)
  lugubris latipennis Rothschild & Jord.
  ocypete (Linné)
Pholus labruscae (Linné)
  s. satellitia (Linné)
Xylophanes tersa (Linné)
  pluto (Fabr.)
  chiron neccus (Cramer)
Celerio lineata (Fabr.)

Margaret M. Cary
Philadelphia, Pa.

BOLORIA MONTINUS ON THE MOUNT WASHINGTON CARRIAGE ROAD.- On Aug. 15 & 16, 1948, L.P.Grey, D.J. Lennox, and W.P. Rogers, later joined by A.C. Frederick, found both sexes of the elusive Boloria montinus in satisfactory numbers and in a fresh condition at Cragway Spring at the point where the Nelson Crag trail meets the Carriage Road. On both sides of the road the species should be found on goldenrod and meadowsweet, provided the sun shines, during mid-August, with early morning the best time to get the species. Thus an easily accessible area has been discovered which eliminates climbing to the summits of the Presidential range in order to obtain this sought-after insect.

W.P. Rogers, Fall River, Mass.,
and L.P. Grey, Lincoln, Me.

AN UNUSUAL RECORD OF THE BLACK WITCH, EREBUS ODORA (L.).- Dr. R.C. Rush of Hudson, Ohio, turned over to the writer a male specimen of the Black Witch, Erebus odora (L.), which had flown into an office window on the General Electric plant at Nela Park near Cleveland during the evening of June 30 or early morning of July 1, 1948. It was the third Ohio specimen of this species of tropical moth which had come to the attention of Dr. Rush in a quarter of a century. The other two were from Akron and Wooster, were females, and were collected in the month of September. The present specimen, a male, is darker than usually illustrated, and has a wing spread of 6.25 inches. Scattered migrants of this largest of the noctuid moths are occasionally found in the northern United States and Canada, but usually in the late summer or early fall months. The specimen at hand was collected a month or two earlier than most of the known records for the northern United States.

Ralph W. Dexter, Kent State Univ., Ohio

TECHNIQUE NOTES

To mount Lepidoptera on the spread board I use CELLULOID photographic plates. I have noted that celluloid is better than paper on account of its transparency and because the scales do not adhere to it as happens on paper. Celluloid is better than glass plates, used by some, because it can be cut to the required measure. Furthermore celluloid can be bought at low prices.

To fight mildew I have used SALICYLIC ALCOHOL with remarkable success.

S.L. de la Torre y Callejas
Matanzas, Cuba

Prof. R.L. Usinger recommends, as superior to other cloth, white, open mesh nylon marquisette for insect net bags, with plain nylon for the strengthening band around the net hoop. (See Bull.Brooklyn Ent.Soc.43:p.68).

John H. Fales is compiling a check-list of the butterflies of Maryland and requests that records from that state be sent him at: 1917 Elkhart St., Silver Spring, Md.

NOTICES BY MEMBERS

Wanted immediately: All species of the genus ANNAPHILA Grt. and forms of AXENUS ARVALIS Grt. Accurate ecological data desired. Offer in exchange Phalaenidae of So. Calif. & living pupae of Hemileuca nevadensis californica Wgt. C.I. Smith, 161 So. 16th St., Apt. 1-B, Richmond, California.

RARE HUNGARIAN LEPIDOPTERA offered in exchange for literature; especially needed are the McDunnough Check-list (both macros and micros) and Ford's "Butterflies". Dr. L. Gozmány, Budapest XII, Györi ut 1. II. 14., HUNGARY.

WANTED: Wasps (Hymenoptera: Vespoidea,Sphecoidea,Chrysidoidea), particularly Psammocharidae (Spider-Wasps) and Mutillidae(Velvet "Ants"), of the world. Will collect Lepidoptera or other insects in exchange. David G.Shappirio, 4811 17th St., N.W. Washington 11, D.C.

Wanted from collectors or museums: any material of PEREUTE, ARCHONIAS and LEODONTA (Pieridae), for determination and distributional data to be used in revisions. It will be returned promptly and handled carefully. Please write before sending shipment. F.M. Brown, 326 Burns Bldg., Colorado Springs, Colorado.

WANTED: for taxonomic study, any U.S. species of Hesperioid genus MEGATHYMUS. I have for exchange many species of North American Macrolepidoptera. Paul R. Ehrlich, 538 Academy St., Maplewood, New Jersey.

NAMED RHOPALOCERA & PARTIALLY NAMED HETEROCERA & MICROLEPIDOPTERA offered in exchange for Microlepidoptera of South Asia. Collections of such Microlepidoptera also solicited for identification. Dr. A. Diakonoff, Zoölogisch Museum, Buitenzorg, Java, D.E.I.

SPEYERIA DIANA and many other scarce Lepidoptera available for exchange for desired spp., esp. of Papilio, Megathymus, Sphingidae, etc. William F. Duhlmeier, 2535 Indian Mound Ave., Norwood 12, Ohio.

In exchange for Philotes of the world, MY ENTIRE COLLECTION of 5,000 specimens of western Lepidoptera. Will send list of check list nos. available. Let me know your localities. R.H. Mattoni,V-29 Terr.War Housing,Richmond, Calif.

ENTOMOLOGICAL EQUIPMENT FOR SALE. Quality material at quantity price. Write for catalog. Bio Metal Associates, P.O. Box 346, Beverly Hills, Calif.

BUTTERFLIES OF THE BELGIAN CONGO AND BELGIUM offered in exchange for North American butterflies (except Hesperiidae). S.G. Kiriakoff, 14 Universiteitsstraat, Ghent, BELGIUM.

Will trade a ROTHSCHILDIA ORIZABA or a ROTHSCHILDIA ARETHUSA for a Samia rubra or a Samia columbia (both males). D.H. Kistner, 1142 Cheyenne Dr., Cincinnati 16, Ohio.

FOR SALE: common MEXICAN BUTTERFLIES in good condition. Supply limited, order early. Write: L.S. Phillips, Loyola University Medical School, 706 S. Wolcott Ave., Chicago, Ill.

The Lorquin Entomological Society (Los Angeles Museum, Exposition Park, Los Angeles 7, Calif.) is offering Czech insect pins for $2.50 per 500 (limit per membership) for members only. Annual dues are $0.50.

Japanese Rhopalocera offered in exchange for needed specimens from S. & Cent. America & S. Pacific Is. (list available on request). T/5 R.J. Jablonski, Med. Det., 13th F.A. Bn., A.P.O.24, Unit 4, c/o P.M.,San Francisco, Cal.

In papers with data. CATOCALA texana, amestris and westcotti, pretiosa, mira, verilliana, ahola and other Texas species. For cash or exchange. Complete list on request. L.H. Bridwell, Forestburg, Texas.

CASH PAID FOR BUTTERFLIES of almost any species from any part of the world. Only perfect specimens with data wanted. Will buy 1 or 100 of any species,or contract for season's catch. A.Glanz, 289 E. 98th St., Brooklyn 12, N.Y.

WANTED FOR STUDY: PAPILIONIDAE OF WORLD, especially P. glaucus group (incl. eurymedon, daunus, etc.); also machaon and thoas group and Nearctic Parnassiidae. Buy or will exchange U.S.Macrolepidoptera. Kent H. Wilson, 430 Ridgewood Road, Fort Worth 7, Texas.

LARGE STOCK OF HIGH GRADE INSECT PINS from Czechoslovakia available at 65¢/100, $6/1000. R.G.Wind, Rt.1, Box 145, Livermore, Calif.

ALL SPECIES OF EUREMA desired, esp. mexicana, proterpia, arbela, gundlachia, damaris, xanthochlora and others. Cuban butterflies offered in exchange. Dr. S.L. de la Torre y Callejas, Playa 75½, Matanzas, CUBA.

LIVING MATERIAL

WANTED: Living pupae of any species of Colias, esp. eurytheme-philodice, in exchange or for purchase. Carl W. Gottschalk, Harvard Medical School, 25 Shattuck St., Boston 15, Mass.

LIVING COCOONS of Attacus atlas & edwardsi,Antheraea mylitta, Actias selene for sale. Send with U.S.A. orders permit from U.S.Dept. Agriculture. Payment full in advance. Himalayan Butterfly Co., Shillong, Khasi Hills, INDIA.

Can offer living pupae Rothschildia orizaba in exchange for pupae Platysamia columbia or gloveri and Callosamia angulifera. R.L. Halbert, 1201 W. 30th St., Los Angeles 7, Calif.

Wanted: EGGS OR COCOONS OF SATURNIIDAE, esp. Platysamia, for rearing & hybridization stock. Offer in exchange pupae of several genera, including Papilio, Parnassius, Speyeria, Polites, Arctia, and Platysamia euryale, or will buy. D.P. Frechin, 1504 N. Lafayette,Bremerton,Wash.

Specimens & cocoons of SATURNIIDAE of the world desired. Correspondence invited. F.E. Rutkowski, St. Bede College, Peru, Illinois.

Wanted: CATOCALA EGGS, esp. of Crataegus (Hawthorn) feeders. Will exchange for other Catocala material. Sidney A. Hessel, 8 Woodmere Blvd. S., Woodmere, New York.

QUESTIONS AND ANSWERS

Q. "Is it usually possible to find differences in eggs of various species of Lepidoptera?"

A. Pretty generally, but not invariably: compare the descriptions and figures in Scudder's "Butterflies of Eastern North America" and such papers as J.H. Cook's on the Incisalias, chiefly in the Can.Ent. vols.39,40, 1907-8.

Q. "Which American Lepidoptera other than Lycomorpha pholus feed on fungi, lichens, mosses, or ferns?"

A. A good many, including most of the true Tineidae on fungi etc., many Deltoid Noctuidae; most or all of our local Lithosiinae (Hypoprepia, etc.) on fungi or lichens or both; also a widely scattered list on ferns, among them the genus Eriopus (Methorasa, Euherrichia) in the Noctuidae. For Microlepidoptera and Geometridae see the food indexes of the "Lepidoptera of New York," part 1, and part 2 (in press).

W.T.M. Forbes

Fascicule II of the "ATLAS DES LÉPIDOPTÈRES DE FRANCE, BELGIQUE, SUISSE, ITALIE DU NORD" was recently published. This is the "HÉTÉROCÈRES" by Claude Herbulot. It includes the families: Amatidae, Arctiidae, Callimorphidae, "Noctuidae", Liparidae, Sphingidae, Thyatiridae, Axiidae, Ceruridae (= Notodontidae), Attacidae (= Saturniidae), Lemoniidae, Psychidae, Heterogynidae, Cossidae, Endromidae, Heterogeneidae (= Limacodidae), Drepanidae, and Thyrididae. There are 402 figures of adults and 22 of larvae, all 424 being colored! The figures in most cases are so good that "picture book taxonomy" should be easy for these families in France. There is a key to all French families of Lepidoptera and a phylogenetic diagram for these families. Subfamilies are keyed under their families. Host plants and flight periods are given.

This little manual will be a useful inclusion for the bookshelf of anyone interested in moths of any part of the world, primarily, of course, for the Palearctic Region. Its price is 350 francs (French) and it can be procured from: Éditions N. Boubée & C^ie^, 3, Place St.André-des-Arts, Paris(VI^e^), FRANCE. For U.S.A. members, remittance can be sent by postal money order and the official exchange rate for U.S. dollars can be easily found by telephoning or visiting any large bank.

Dr. Charles D. Michener, recently Associate Curator of Insects in the American Museum of Natural History, has accepted an appointment as Associate Professor in the Department of Entomology of the University of Kansas. This department has long had a record of distinction in training taxonomic entomologists. Dr. Michener plans to continue his research on the systematics of the Saturniidae and bees.

PLEASE NOTIFY THE NEWS EDITORS OF CHANGES OF ADDRESS PROMPTLY

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As noted on page 84, Dr. A. Diakonoff, of Java, has provided us with abstracts of papers in Dutch journals and will be doing so regularly. Eventually we hope to have Society members preparing the brief reports on Lepidoptera papers in every country of the world in a manner which will result in: listing of each paper in the News very soon after it is published, a more complete coverage than is now possible, a more informed appraisal of the paper than is sometimes possible for us for remote regions or unfamiliar languages, and an easing of the exceedingly heavy time load which we have imposed on ourselves in making the News give the services we feel it should.

Our policy regarding copies of the News which fail to reach subscribers is as follows: We are willing to guarantee delivery of every issue. If you fail to receive any number by the time the succeeding number reaches you, merely drop us a card and the lost issue will be sent you.

With the present number the annual Membership List is being distributed. We hope you will notice which of your lepidopterist acquaintances are not present and tell them of the Society and the News. Several members have loaned friends a copy of the News with the result that the friends soon became members.

New members are not listed in the present issue, since they are all included in the Membership List.

THE LEPIDOPTERISTS' NEWS is the monthly periodical of The Lepidopterists' Society. Membership is open to anyone interested in the study of butterflies & moths. The 1948 dues, including subscription to the NEWS, are $1.50 for Regular Members and $3.00 or more for Sustaining Members. Please make remittances payable to : Charles L. Remington.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

Volume II | November 1948 | Number 8

ANNOUNCEMENT OF THE FIELD SEASON SUMMARY FOR 1948

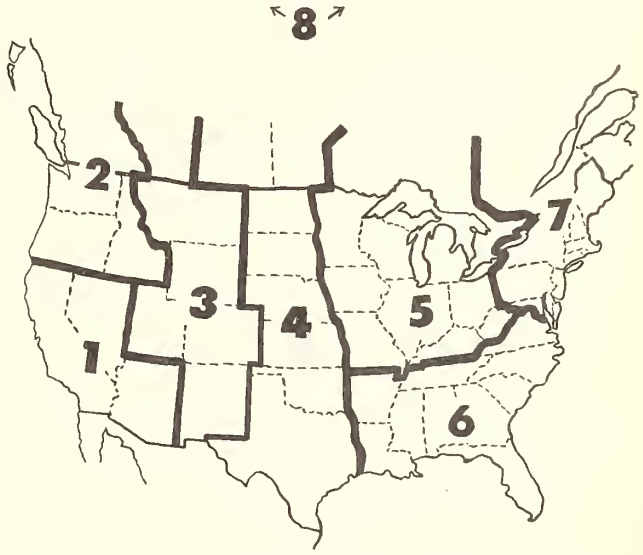
The December issue (No. 8) of Volume I of the News was devoted largely to the Society's first field season summary of Lepidoptera in North America. Once again we are ready to assemble the annual summary, and we invite the fullest possible participation by Society members. Two aspects interest us in this summary. First, it is clear that there is lively interest among News readers in the fresh information on collecting results around the continent during the recent season. Second, the summary constitutes a permanent reference source which will grow in value as more and more years are on record and factual information accumulates for analyzing cycles.

Certain weaknesses appeared in the 1947 Summary. There was regrettably thin coverage of the southeastern and central states and the Canadian West. In contrast, the enthusiastic participation of the Californians resulted in a fine summary for the Southwest. Moth records were altogether too few, with accurate data lacking even for such popular groups as Sphingidae and Catocala. Since moths comprise the major portion of the Lepidoptera, at least half of the Summary should be devoted to them.

The following information is again requested from individual cooperators: 1) Were the flight periods of the various species earlier or later than the average? 2) If either earlier or later, did they return to normal or otherwise change as the season progressed? 3) Did unusual climatic events (cold, drought, excessive rain, hurricanes, etc.) occur, and if so what was their effect on Lepidoptera? 4) Did biological or human agencies(parasites, forest fires, swamp draining, birds, diseases, etc.) affect Lepidoptera this year in an unusual way or to a significant degree? 5) Did any individual species show very unusual changes -- rare species suddenly common or vice versa? 6)Did the migrating species have noteworthy flights and if so, what detailed observations were made? Please note that it is of little value to call any season "good" or "bad". Details are essential.

In the Season Summary for 1947, individual reports were received from 46 members -- a fine response for the initial effort, but we hope to double it this year. Every report will be used and then placed in a permanent Society file for later reference. All participants will be named in the published summaries.

For convenient grouping of the summaries, North America will be considered in eight fairly uniform faunistic areas, for each of which a general summary will be written from the individual reports. The accompanying map



shows the eight divisions. Each regional summary will be prepared by an active lepidopterist in the region. Five regions were so handled last year and once again the same five members will be serving. This year Dr. R.L. Chermock and Mr. P.S. Remington are rounding out the group. Please send your reports directly to the regional coordinator and if you collected in more than one region please prepare separate reports. REPORTS MUST REACH THE COORDINATORS BEFORE JANUARY 15, 1949. The coordinators and their addresses are:

Zone 1. (Southwest) - LLOYD M. MARTIN,
Los Angeles County Museum, Exposition Park,
Los Angeles 7, Calif.
Zone 2. (Northwest) - JOHN C. HOPFINGER,
Brewster, Wash.
Zone 3. (Rocky Mts.) - DONALD EFF,
820 Grant St., Boulder, Colo.
Zone 4. (Great Plains) - DON B. STALLINGS,
216 W. First St., Caldwell, Kansas.
Zone 5. (Central) - P.S. REMINGTON,
5570 Etzel Ave., St. Louis 12, Mo.
Zone 6. (Southeast) - DR. RALPH L. CHERMOCK,
Dept. of Biology, University of Alabama,
University, Ala.
Zone 7. (Northeast) - EUGENE MUNROE,
Institute of Parasitology, Macdonald College,
Quebec, CANADA.
Zone 8. (Far North) - send reports to the News
editor.

C.L.R.

Any attempt at classification requires a series of categories into which the classified objects can be arranged. Animal classification in recent years has been brought to a point at which there is nearly universal agreement on the basic categories to be used. The number and names of intermediate categories differ greatly among various writers, but there is no present necessity for uniformity in these interjacent categories. For discussions of the intermediate categories above and below species see the News 2: pp.3-4,15,16,39.

For the benefit of News readers unfamiliar with the broad classification of animals a list and discussion of the categories follows.

The basic unit of classification is the SPECIES. A species may be thought of as a population of actually or potentially interbreeding individuals whose range may be worldwide or limited to a single swamp or mountain peak. In other terms, a species is a group of individuals which are very similar to one another, which differ from all other living animals in at least one consistent characteristic, and which can interbreed and produce fertile offspring. Further discussions of the species may be found in the News 2: pp.3, 62. In separate parts of the range of a species the individuals may have characters which distinguish them from the individuals in other parts of the range. These may be named as SUBSPECIES, often called RACES.

A group of closely related species making up a unit consistently separable from all other groups of species is a GENUS. Like all other categories except species, the genus is a man-made concept and various authorities differ greatly in the breadth of the genera. As elsewhere, among American lepidopterists there is strong disagreement, so that one well-informed specialist may lump all "Hairstreaks" in the genus Thecla while another equally able specialist may separate the same species into the genera Thecla, Strymon, Incisalia, Mitoura, Habrodais, Atlides, Callipsyche and Satyrium, and still a third authority may accept these eight genera but split Strymon further into several other genera. Usually those who recognize the fewest genera (the "lumpers") are the older workers who grew up with the smaller number and are understandably crystallized in their viewpoint. Those who accept the most genera (the "splitters") are usually the newer workers who are actively studying the group and equally understandably see the differences looming larger than they really are. The middle-roaders are usually the dispassionate observers who try to use the system and who can thus examine the arguments from a relatively unprejudiced viewpoint. A very convenient category which is all too often ignored by lepidopterists (in contrast to other taxonomists) is the SUBGENUS. If a cohesive genus includes species which fit into lesser groupings, these latter should be considered subgenera.

A group of similar genera which fit together in sharing at least one fundamental character is called a FAMILY. For example, all dog-like mammals(dog, foxes, wolf, etc.) belong to the same family. Similarly, all cat-like mammals (cat, lion, tiger, lynx, etc.) belong to one family. A family may be divided into two or more TRIBES, and of course a tribe may be divided into SUBTRIBES. See the News 2: p.73, for an example of the application of these categories. A family name can always be recognized by the ending "-idae". The ending for subfamily is "-inae", for tribe "ini", and for superfamily "-oidea". No other categories have standardized endings.

A group of families making up a very distinct unit with great structural and ecological differences from all other families is called an ORDER. For instance, the flesh-eating mammals with long canine teeth (cats, skunks, dogs, bears, raccoons, weasels, etc.) all belong to one order. Similarly, all insects having four heavily-scaled wings belong to one order (the Lepidoptera). An order may be divided conveniently into two or more SUBORDERS. A suborder may be divided into SUPERFAMILIES.

A series of orders with major common characters by which they differ from all other orders is called a CLASS. All animals having exactly three pairs of true legs and in some stage of their life history having eleven abdominal segments are in one class (the Insecta). Likewise, all warm-blooded animals having hair are in the Class Mammalia; all warm-blooded animals having feathers are the Class Aves. A class may be divided into SUBCLASSES, and a subclass may be divided into SUPERORDERS.

Finally, a group of classes which differ from all other classes in major structural characteristics is called a PHYLUM. All the single-celled animals are in the Phylum Protozoa. All animals with a linear series of segments, jointed limbs, and ventral nerve cord are in the Phylum Arthropoda (insects, crabs, spiders, ticks, centipedes, etc.). SUBPHYLA and SUPERCLASSES are used in many instances.

The following sample list of animals in their respective groups shows the system of categories defined above:

Phylum Arthropoda
Subphylum Tracheata
Class Insecta
Subclass Pterygota
Division Neoptera
Superorder Hemimetabola
Order Orthoptera (crickets, etc.)
Superorder Holometabola
Order Coleoptera (beetles)
Order Lepidoptera
Suborder Jugatae (hepialids, etc.)
Suborder Frenatae
Superfamily Papilionoidea
Family Nymphalidae
Subfamily Argynninae
Tribe Argynnini
Subtribe Argynnidi
Genus Argynnis
Genus Speyeria
Subgenus Speyeria
Subgenus Semnopsyche
Species cybele
Subspecies leto
Species diana
Subtribe Boloriidi
Genus Boloria.

C.L.R.

A COLLECTING TRIP IN SEARCH OF SPEYERIA EGLEIS SECRETA

by P.S. Remington, Jr., St. Louis, Missouri
and J. Donald Eff, Boulder, Colorado

The race secreta of Speyeria egleis named by dos Passos and Grey(1945) has remained one of the rarest of Speyerias ever since. Among several hundred specimens of Speyeria sent by the senior author to Mr. L. Paul Grey in 1946 for determination, three specimens of secreta were found, taken on July 5, 1941, by P.S.and C.L. Remington at Rabbit Ears Pass, Colorado. The trip presently described was intended to relocate the exact collecting spot if possible and to study the habits and abundance of secreta in a positively known locality.

After many preparations and much planning, the authors loaded their car with assorted collecting equipment, camping gear, food and bedding, forgetting of course a few of the most needed items, always discovered too late. We left Boulder, Colorado, on the afternoon of July 3,1948. We crossed the Continental Divide at Berthoud Pass. As we descended the western side we observed that the vegetation changed and that we were entering rolling upland prairie, covered with Sagebrush (Artemisia) and occasional sparse stands of aspen or juniper. The aspect of the country was quite different from that of the foothills of the Front Range to which we were accustomed. From Granby on, the country changed little until we approached Muddy Pass, the eastern slope of which borders the Routt National Forest and leads into Rabbit Ears Pass. Here we crossed the Continental Divide again, Rabbit Ears Pass overlooking the western slope of the Divide. As we went up Muddy Pass the Sagebrush prairie region disappeared and gave way to lush stands of flowers and conifers. We reached this locality toward evening, too late to determine anything of the butterfly population. Later, when opportunity afforded, we found Muddy Pass to be a poor collecting area with no secreta present. We found a good camping spot at the Columbine Camping Ground located between Muddy Pass and Rabbit Ears Pass. Our view that this was a good camping ground was upheld by the appearance of the hordes of mosquitoes which always seem to know where the "pickings" are best.

Early the next morning, blessed with excellent weather, guaranteed and produced by the senior author against the skepticism of colleague Eff, we broke camp and headed for the western slope, where recollection promised that we should find secreta. Both Wiest, who collected the types, and Remington reported that secreta would be found flying along the road going down the western slope and particularly along an old road which angled off to the right. As we drove we were alert for any likely looking collecting spot. Finding such an area we would stop and give full attention to every Speyeria that we saw, hoping each time that it would prove to be secreta. At this point it might be well to point out that as one descends the western slope the ecological conditions change sharply at different elevations. The Summit is really a plateau densely wooded in spots and characterized by open meadows and marshy areas. This is succeeded, at lower levels, by a drier evergreen area, which was the point of our first success. Along the road at about 8000 feet above sea level we took our first secreta, flying with several other Speyeria. In fact, before the day was over we took a total of seven species of Speyeria. Until we learned to distinguish secreta in flight, it was necessary to take every Speyeria we saw. After a while we felt that we could recognize secreta pretty well by the lighter rosy flush on the underside, although we discovered when we sent the entire catch to Grey that many specimens which we had thought were secreta were really of a race of atlantis close to dorothea. As predicted by Grey, zerene and atlantis occur sympatrically in this area and it takes careful study to separate them. Grey thinks they do not interbreed. The safest course for the collector searching for secreta is to do as we did and catch every Speyeria he sees flying.

Progressing on down the western slope of Rabbit Ears Pass toward Steamboat Springs, we noticed that the vegetation gave way to a predominantly aspen area interspersed with some oak and with a ground carpet of solid bracken. Here was a congregation of butterflies at a wet roadside spot which was recognized by P.S. Remington as the place where he and his son had originally taken secreta. An intensive search resulted in the discovery of the old road which Dr. Wiest had mentioned, and which led off around the brow of the mountain for several miles. This road had been long unused and was overgrown with flowers and weeds and was crossed at several places by rills which proved to be a mecca for many species of butterflies, including male secreta. The sight of a half dozen fresh males of S. secreta congregated about a wet spot is one long to be remembered. It should be pointed out that while more than a hundred specimens of "secreta" were caught by the two authors along this road in a day and a half, only very few females were taken and these were all found, not along the road, but cruising thru the aspen and dense bracken which carpeted the slopes at this point. The fact that females were very scarce and hard to capture may be attributed in part to the fact that we were probably a little too early to find females in abundance. Experience shows that in the genus Speyeria the females usually emerge considerably later than the males. We hope to visit the locality another year, at about the middle of July, to verify this idea.

After collecting intensively in the area for a couple of hours, we completed our descent into Steamboat Springs, collecting as we went. Below the locality just described, which proved to be the heart of the range of secreta, the vegetation changed to oak and Sagebrush. Collecting here proved to be not nearly so rich as the higher areas, but Speyeria zerene sinope was taken and secreta sparingly. At the base of the western slope not one secreta was found. From our experience on this trip, we believe that secreta flies dur-

ing the fore part of July on the Western Slope in northwestern Colorado wherever there is a predominantly aspen or oak vegetation at altitudes from 6000 to 8000 feet.

Our experience on this trip also proves very clearly the extreme importance of correctly labelling specimens as to locality and date, and elevation wherever significant. The original description of secreta gave the type locality as "Estes Park". The senior author has already pointed out in the Entomological News (1947) that this is an error. Two years ago Dr. Roy Wiest accompanied the present authors on a trip to a spot which he remembered as the type locality, a ravine at Poudre Lakes, near the crest of the Continental Divide in Rocky Mountain National Park. On that trip no Speyeria were seen except S. mormonia eurynome. Both authors visited the alleged type locality again in 1948, shortly after returning from Rabbit Ears Pass, and no Speyeria of any sort was seen. The conclusion is forced upon us that the type locality is undoubtedly Rabbit Ears Pass, for Wiest has collected there many times. This conclusion is supported by the fact that in no way does the habitat at either Estes Park or Poudre Lakes resemble that of the Rabbit Ears Pass area.

Lest the readers gain the impression that we collected only secreta, we list here a few of the other butterflies taken on this two-day trip: Speyeria atlantis ssp. near dorothea Moeck, S. mormonia eurynome(Edw.), S. edwardsii (Reak.), S. zerene sinope dos P. & Gr., S. callippe ssp. near meadii (Edw.), S. hydaspe ssp. near sakuntala (Skin.), Papilio rutulus Luc., P. eurymedon Luc., Euchloe ausonides coloradensis Hy.Edw., Pieris napi pseudonapi B. & McD., an interesting race of Euphydryas anicia(Dbldy. & Hew.), Melitaea acastus Edw., M. palla Bdv., Phyciodes nycteis drusius Edw., P. tharos pascoensis Wgt., P. camillus Edw., Limenitis wiedemeyerii(Edw.), Lycaena nivalis browni dos P., L. helloides florus(Edw.), Plebeius aquilo rusticus(Edw.), P. saepiolus(Bdv.), Glaucopsyche lygdamus oro(Scud.), and others.

Our memories of this trip, besides the surprisingly good catch of a butterfly which was regarded as one of America's rarest, include the elusiveness of secreta --certainly one of the most artful dodgers in Lepidoptera, the difficulties of papering and labelling our catch by lantern light while we served as banquets for the mosquitoes, the quiet beauty and solitude of that deserted road where we saw the swarms of butterflies, the occasional yellow and black flash of the Western Tanager and the leap of the startled deer across the trail, and finally, the satisfaction that comes with the successful completion of an eagerly anticipated expedition.

REFERENCES

dos Passos, Cyril F. & L. Paul Grey. 1945. "A New Species and Some New Subspecies of Speyeria." American Museum Novitates, no. 1297: pp.1-17, figs.1-30.

Remington, P.S., Jr. 1947. "Notes on the Type Locality of Speyeria egleis secreta dos Passos and Grey." Entomological News, vol.58: pp.99-100.

ON THE EYE COLORS OF THE COLIAS EURYTHEME-PHILODICE COMPLEX. Since Mr. dos Passos published his paper on this subject (see Lep. News 2: p.44), I have examined well over 400 specimens of this complex alive in the field at Maplewood and South Orange, Essex Co., N.J.; Bethesda, Cabin John, Carderock, and Great Falls, Montgomery Co., Maryland; and Cheltenham, Cheltenham township, Montgomery Co., Pa. All of those specimens had normal yellow-green eyes. Some of those specimens were retained for my collection, being killed in jars of Potassium Cyanide, and, to my surprise, the eyes of all those specimens darkened considerably as time went on. I believe that the darkening is due either to the dessication of the specimen or to the chemical effect of the cyanide on the pigment in the eyes. Since no darkening was found in the eyes of living specimens, I think that the possibility that it is caused by genetic factors is slight.

ON THE PARASITIZATION OF DANAUS PLEXIPPUS. Late this summer, I raised about eighteen specimens of Danaus plexippus from larvae. Two specimens were parasitized and the two parasitic flies which hatched from the pupae were sent, along with the pupae to Dr. C.W. Sabrosky for identification. He identified them as Compsilura concinnata(Meigen) (Diptera, Larvaevoridae).

ON THE USE OF "FLYWAYS" BY PAPILIO GLAUCUS. This spring and summer, I noticed in Bethesda, Montgomery Co., Md., individuals of P. glaucus flying past one place towards open fields in the southeast between 9:30 and 11:00 o'clock in the morning and flying in exactly the opposite direction between 4:00 and 5:30 in the afternoon. If someone could offer an explanation of this phenomenon, I would appreciate it very much.

Paul R. Ehrlich
Maplewood, N.J.

A specimen of Anaea andria, the Goatweed Butterfly, with identification numbers clearly stamped on one wing, was found in Kansas by a student. Presumably someone was studying flight of this species. If it is a member of the Lepidopterists' Society, please write the News editor at once and he will notify the finder of the specimen.

Readers of the News may be interested to know of two new maps being published by the AMERICAN GEOGRAPHICAL SOCIETY, BROADWAY AT 156th STREET, NEW YORK 32, N.Y. One is of the U.S.A. and southern Canada at a scale of about 1 inch to 80 miles. The other, not yet off the press, covers Alaska, northern Canada, and Labrador. The price is $4.00 each.

Professor C.P. Alexander writes that: "the well-known tropical collector, William Clarke-MacIntyre, Cojmies, Manabi, ECUADOR, is resuming collecting and would be interested to hear from prospective buyers. MacIntyre and his native assistants are among the most efficient collectors of tropical insects whom I have ever known."

A SURVEY OF THE HELOPHILOUS MACRO-MOTHS OF THE HUNGARIAN MOORLANDS

by Dr. Lancelot A. Gozmány
Budapest, Hungary

I.

The moorlands, or swamps, of the Carpathian Basin in comparison with those of the rest of Europe are unique in their psammological aspects and especially their helophilous (swamp-loving) fauna. For present purposes swamps may be arranged into five categories, as follows:

1. Glacial Swamps
2. Fluvial Swamps
3. Lake-shore Marshes
4. Peat Bogs, or Turfmoors
5. Sphagnum Bogs

The first three are of inorganic origin, and are simply the creation of geological and geographical factors. The others are the result of decaying vegetable matter on which a special flora exists. If you try to draw a rough map of the distribution of the types of European swamps you can assert with more or less precision, that, aside from fluvial and shore swamps occurring in every European lowland where rivers and lakes find sufficient space for overflowing their banks to create stagnant backwaters, the swamps of the Scandinavian Peninsula, North and Middle Germany, the Baltic States, Poland and Hungary are the remnants of the moving of glaciers and hydrogeologic corrosion of ice. Peat and sphagnum bogs can be found all over Europe, especially in their most classical sites - Ireland and Great Britain, but also sporadically in Germany, France and Hungary.

Before surveying the special macro-moth fauna of the Hungarian swamps, I must first draw attention to the fact that the term Hungary in this paper designates the territory of this country as it was before World War I, that is, 1914, this territory being geographically, and therefore zoogeographically, a perfect unity.

II.

Moorlands have a typical aquatic flora (Typha, Carex, Euphorbia, Glyceria, etc.), extending sometimes over miles of otherwise agriculturally valuable soil, presenting a characteristic landscape. In this special habitat a special Lepidoptera fauna also lives.

Collecting in swamps has its manifest hindrances. These were the reasons why older collectors have not satisfactorily investigated these habitats. Nobody can comfortably put up with inconveniences of swamp climate, wetness, etc. Another cause of infrequent collecting was ignorance of localities. Until the third decade of this century "rarer" helophilous species were represented by only one or two specimens in the collection of the Hungarian Natural History Museum in Budapest. There is, for instance, Rhadinogoes lepigone (Möschl.), with the note in the Catalogus Fauna Regni Hungariae (1898): "Rarissima, specimen unicum ex Hungaria cognitum". In the above Museum there are three specimens, last date: 1928. I caught 26 specimens in one night on the reedy shore of Lake Velence, central Hungary. Pelosia obtusa (H.S.) was held to be one of the rarest helophilous moths, but you can collect 10-15 specimens in the above place and in the southernmost reedy swamps of Lake Balaton, southwest Hungary. It is said that this species is extinct in England and Italy. Possibly it was not sought after enough! The same holds true for Gortyna leucostigma (Hbn.), Aspilates formosaria (Ev.), Archanara neurica (Hbn.), and others.

Collecting in swamps therefore calls us lepidopterists urgently. Furthermore, river improvements, the draining of marshy regions to transform them into agriculturally valuable land threatens to extirpate sometimes unique and always peculiar floras and faunas. The priceless relict marshes, for instance, of geologically young, diluvial origin in the middle of the Great Hungarian Plains have their only ecological and biological equivalents 2000 miles away, near Stalingrad and in the Volga Valley.

How to collect moths in swamps? There are three points to be considered:

1. Clothing. Have watertight, light boots (preferably rubber where very wet ground is concerned), old, warm clothes, and, most important!, a light net or gauze applied in some manner (on the rim of your hat, perhaps) to keep away gnats. It is also advisable to bring with you a hunter's tripod on which to sit.

2. Collecting lantern. A satisfactory arrangement for the lamp is to have made three poles of bamboo or other light wood, cut into convenient lengths for carrying. These sections can be joined together for use. One pole should be longer than the other two. At the proper location stick the two shorter poles into the soil parallel to each other and stretch your sheet between them. This forms the reflector and collecting surface. Thrust the longer pole into the soil so that it leans toward the sheet and hang the lantern on it near the sheet. The lamp should face the marsh and should be placed at the edge of woods if there are any. Otherwise the collecting is most successful if the lamp shines directly into the reeds.

3. Lure. The usual "sugaring" is not applicable. The best method is to bind 4-5 slices of dried apple or whole dried pears on a string, immersing them in the following mixture: 1 quart beer, 1 pound sugar, 1 pound honey. Put nothing else in the liquid! Immersion should last for one hour. The strings (20 are convenient) can be looped on the lower branches of trees on the shore of clearings in marshy woods, or, in fact, on 3 or 4 strong reeds taken together. Disperse these about every 20 yards, carefully choosing a path which will be passable also in the dark. Even so, collecting is sometimes unsuccessful,

as masses of gnats may light on the lures, preventing moths from approaching them. Do not hang the lures on dry twigs, because ants are likely to swarm onto them.

III.

A strict separation of which moths are helophilous is, of course, impossible on technical grounds. This is rather a matter of aspect. The greater part of the moths that feed on Alders (Alnus spp.) are not helophilous, although this is a typical swamp-loving tree. Furthermore, Polia splendens (Hbn.) feeds on various small plants in many different habitats, including swamps, where it can be caught in great numbers.

After considering their ecological associations, both plant and animal, I consider the following Hungarian species as helophilous moths. The numbers refer to the five swamp habitats listed above in Section I.

Sesia palustris (Kautz), on Euphorbia aquatica. (1)
Comacla senex (Hbn.), on liverworts (Jungermannia spp.). (1,3,5)
Pelosia muscerda (Hufn.), in woods. (1,2,3)
Pelosia obtusa (H.-S.). (3,5)
Rhyparioides metelkana (Ld.), on palustrine plants. (1,2)
Phragmatoecia castanea (Hbn.), on reed(Phragmites spp.). (1,2,3,5)
Laelia coenosa (Hbn.), on reed (Phragmites spp.). (1,2,3,5)
Cosmotriche potatoria (L.), on sedge (Carex, Dactylis, Luzula). (1,2,3,5)
Acronycta leporina abs. bradyporina & melanocephala, on birches and grasses. (2,3)
Rhyacia strigula (Thnbg.), black heath (Erica cinerea). (4)
Rhyacia hyperborea (Zett.), on blueberry(Vaccinium myrtillus). (4)
Aporophyla nigra (Haw.), on dock (Rumex spp.). (4)
Gortyna leucostigma (Hbn.) & abs. fibrosa & albipuncta on flag (Iris pseudacorus). (2,3,4,5)
Hydroecia micacea (Esp.), palustrine plants. (3,5)
Hydroecia petasitis (Dbld.), on sweet coltsfoot (Petasites hybridus). (2)
Phragmitiphila typhae (Thnbg.), on cat-tail (Typha latifolia & angustifolia).(1,3,4,5)
Phragmitiphila typhae ab. fraterna. (2,3,5)
Phragmitiphila nexa (Hbn.). (2)
Archanara algae (Esp.), on sedge (Typha latifolia). (1,3,5)
Archanara gigantea (Osth.). (1,2,3,5)
Archanara sparganii (Esp.), on sedge and reed (Typha latifolia & Phragmites communis).(4)
Archanara geminipuncta (Hatch.), on reed (Phragmites communis). (4,5)
Archanara neurica (Hbn.). (2,3)
Archanara dissoluta & f. hessii (O.). (5)
Archanara dissoluta ab. arundineta. (1,3,5)
Meliana flammea (Curt.), on reed (Phragmites comm.). (1,2,3,5)
Tapinostola extrema (Hbn.). (1,2,3)
Tapinostola pygmina (Haw.). (1,2,3,5)
Tapinostola hellmanni (Ev.), on reed grass (Calamagrostis epigeios). (1,2)
Rhizedra lutosa (Hbn.), on reed (Phragmites comm.). (1,2,5)
Sedina büttneri (Hering). (2,3) (coll. Nattan, Dr. Kovács)
Athetis palustris (Hbn.), on palustrine plants. (4)
Radinogoes lepigone (Möschl.). (2,3,5)
Phytometra chryson (Esp.), on hemp agrimony, and glutinous sage (Eupatorium cannabinum & Salvia glutinosa). (2,4)
Anarta myrtilli (L.), on heather (Calluna vulgaris). (4)
Eustrotia uncula (Cl.), on grasses. (1,2,3,5)
Schrankia turfosalis (Wocke). (2,3) (coll. Dr. Kovács)
Acidalia corrivalaria (Krtschm.), on palustrine plants.(2,3,4)
Aspilates formosaria (Ev.), on hemp agrimony (Eupatorium cannabinum). (1,3)
Carsia paludata var. imbutata (Hbn.), on peat blueberry (Vaccinium oxycoccos). (4)
Eupithecia absinthiata (Cl.). (1,3,4)
Arsilonche albovenosa (Goetze). (1,2,4,5)
Boarmia danieli. (3) (coll. Dr. Kovács, and according to him, a typical moth of our ancient peaty-woods.)

There are still other moths (for instance, Nudaria mundana L., Acosmetia caliginosa Hbn., etc.) that prefer wet places and yet cannot be held strictly helobious. Heavy dew and a humid northern hillside are enough for them to occur in places many miles away from any river, lake, or swamp.

BUTTERFLY MIGRATION NEAR ITALY

The interesting communications by Saville and Henderson on bird migration in Science, June 4, 1948, recall a remarkable insect migration that I witnessed years ago.

On August 14, 1934, at 8 A.M., I had occasion to leave a schooner, becalmed about 28 miles due south of Messina, Italy, and proceed in a small motor boat in quest of supplies. Travelling north at about 12 knots over a glassy sea, we observed a great number of small, pale yellow butterflies all flying west a few feet above the water. They were not grouped in flocks, but flew singly, apparently spaced about 50 to 100 yards apart. As I recall it, we continued to see them for a distance of several miles as we entered the funnel between Sicily and the Italian mainland. They were all about 5 or 6 feet above the water, as I recall it, and every single one was flying due west, as nearly as we could judge. I can give no accurate estimate of the size of these butterflies, but, as nearly as I can recall it, the wing span appeared to be between 3 and 5 cm.

The distance across the strait, east to west, at the point where we first encountered the flight, is about 14 statute miles, and it narrows progressively as Messina is approached.

The ecological meaning of this flight, and the instinctive drive and sensory clues involved are interesting problems for speculation and study.

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BOOK REVIEWS

9. Biologie der Schmetterlinge
by Martin Hering*

In spite of being entirely in German, this book should be on the reference shelf of every specialist in Lepidoptera. It is the only existing scholarly treatment of the various aspects of lepidopterology other than strict classification. The material is considered from a world-wide basis and all groups of Lepidoptera are included. The most direct means of showing the scope of the book is to give a translation of the chapter titles, as follows:

INTRODUCTORY SECTION

1. Characteristic Features of the Structure of the Lepidoptera.
2. Phylogeny and Affinities in Lepidoptera.
3. Egg and Oviposition.
4. The Larva.
5. The Pupa (Nymph) and its Development.
6. The Hatching-out of the Imago.

THE LIFE OF THE IMAGO, ITSELF

7. The Food of the Lepidopteron.
8. Courtship and Mating.
9. The Sensory Life of Lepidoptera.
10. The Flight of Lepidoptera.

GENERAL PROBLEMS

11. The Geographical Distribution of Lepidoptera.
12. Alternation of Generations and Polymorphism.
13. Phenology. Melanism and Albinism.
14. Enemies of Lepidoptera and Protective Devices against Them.
15. Aquatic Lepidoptera.
16. Mining Lepidoptera.
17. Gall-making Lepidoptera.
18. Lepidoptera in Relation to Ants and Termites.
19. Symbiosis and Related Phenomena.
20. Forms of Association among Lepidoptera.
21. Experimental Biology.
22. Peculiarities of Instinct Development.
23. Destruction and Benefits from Lepidoptera.

CONCLUDING CONSIDERATIONS

24. The Practice of Biological Observation.

Chapter two concludes with a classification of the Lepidoptera and a phylogenetic chart of relationships. Dr. Hering recognized 56 families.

Within this book there are assembled numerous interesting trivial facts, such as the range of size in Lepidoptera, from Thysania agrippina (225 mm.) to Nepticula acetosae (3 mm.). Equally interesting and far more significant are the discussions of experimental physiology, mimicry, zoogeography, and numerous other profound aspects of lepidopterology.

The illustrations are regrettably few for a work of this sort, but the plates are of excellent quality.

C.L.R.

* Pp. 480; 13 plates, 82 figs. Berlin, 1926 (Julius Springer). For sale by J.D. Sherman, 132 Primrose Ave., Mt. Vernon, N.Y., for $9.00.

WAR LOSSES IN JAPAN

Mr. Takashi Shirôzu of the Entomological Laboratory, Kyushu University, has reported on war damage to lepidopterology in Japan.

The losses were relatively slight. Dr. J. Shibuya, able authority on the Pyralidae, was killed when Rota Island, in the Marianas, was bombed. Mr. I. Fukushima was killed in the fighting in North China.

None of the major collections, including those at the universities in Sapporo and Fukuoka, were destroyed. However, the collection of the Tokyo Agricultural College was burned, as were private collections including those of K. Nomura in Tokyo and Mr. Shirôzu, himself.

The large collections of the Taihoku University and the Central Experiment Station in Formosa were not damaged, but were occupied by the Chinese Army and are now the property of the Chinese Government. Dr. S. Issiki, noted authority on Japanese and Formosan Microlepidoptera, has returned to Japan, as have his colleagues, Dr. T. Shiraki, Dr. Y. Miwa, T. Mitono, and M. Chujo. None of them was able to bring his literature or private collection.

*

We have recently learned that the very valuable library of the Societa Entomologica in Genova, Italy, was destroyed by fire as a result of bombardment during World War II.

LEPIDOPTERA LITERATURE FOR SALE

In the April News (p.42) announcement was made of large sets of papers being disposed of by the Entomological Society of Washington at fairly reasonable rates, with a 20% reduction for Lepidopterists' Society members. Dr. Gurney, secretary of the Washington Society, has informed us that there was a good response from our members. He further stated that one more lot has been discovered in his society's store rooms and he has agreed to a very low price for this valuable literature.

The new lot consists of two parts. The first includes about 58 papers, with about 230 pages and at least 5 plates. They were published from 1897-1905. There are about 40 papers by H.G. Dyar. The rest are by A.R. Grote, G.H. French, J.B. Smith, and others.

The second part consists of a substantial portion of Dyar's series entitled "Life Histories of North American Geometridae", published in at least 68 parts in Psyche from 1899 to 1905. The set now being offered comprises between 45 and 50 parts of the first 68. There are over 100 pages in the lot.

These two lots of scarce old works total over 100 papers and well over 300 pages, plus plates. The two sets together may be obtained by Lepidopterists' Society members for only $3.00, postpaid, by writing to:

Entomological Society of Washington
c/o Bureau of Entomology & Plant Quarantine
Washington 25, D.C.

C.L.R.

346. Ariga, K., "Distribution of butterflies in Matsumoto City and its eastern mountain district, Japan." (In Japanese). Collecting and Breeding (Tokyo), vol.9: pp.185-188. Oct. 1947. (T.S.)

347. Beirne, Bryan P., "Notes on the Origin and History of the British Insect Fauna." Proc. Roy. Ent. Soc. Lond. (A), vol.23: pp.1-8. 18 Mar. 1948. Supplements with records of Lepidoptera and other insects his earlier paper (see Lep. News 2: p.18).

348. Bibby, F.F., "Notes on the Insect Fauna of the Samar Group, Philippines." Philippine Journ. Science, vol.77: pp.61-81. May 1947. Records 3 identified spp. and 10 families of Lepidoptera from Calicoan Is.

349. Chermock, Ralph L. & Ottilie D., "Notes on the Life Histories of Three Floridian Butterflies." Canadian Ent., vol.79: pp.142-144,9 figs. July-Aug. 1948. Life histories of Appias drusilla neumogenii (host - Beloperone guttata), Strymon acis bartrami (host - Croton linearis), all in Florida.

350. Corbet, A. Steven, "Papers on Malaysian Rhopalocera. VI. Symbrenthia hipplocla (Hübner, 1838), a Species distinct from S. hippoclus (Cramer, 1779)." Entomologist, vol.81: pp.164-167, 2 figs. July 1948. Confirms 1947 findings of Toxopeus & Pock-Steen of separateness of these 2 spp. Describes as new: S. hippocla race selangorana (Malaya) and S. hippocla race viridis (N.Borneo). Lists all known local races of the two largely sympatric spp. Figures uncus of a race of each.

351. Darlow, H.M., "Insects taken at Sea, August to October, 1947." Entomologist, vol.81: pp.158-163. July 1948. Records 14 spp. of Lepidoptera taken out at sea between England and Malta.

352. Diakonoff, A., "Een verbeterde methode voor het monteeren van genitaal-preparaten." (An improved method for mounting genitalia). (In Dutch). Entom. Berichten, vol.12: pp.259-260. 1 July 1948. The method is to macerate the genitalia in 10% sodium hydroxide, transfer to 96% alcohol in benzyl-alcohol and enclose permanently in Venetian turbenthine on small glass slides which can be put on the pin of the specimen concerned. (A.D.)

353. Diakonoff, A., "Records and descriptions of Microlepidoptera (2)." Treubia, vol.19: pp.483-524. Sept. 1948. 2 Phaloniidae, 31 Tortricidae and 2 Chlidanotidae are recorded from the Malay Archipelago. New species, all Tortricidae, are: Zacorisca toxopei (N. Guinea), Z. t. aplasta (Borneo), Isotenes cryptadia (Buru), I. inae (Java, Sumatra, Assam), I. thaumasia (Java, Sumatra), Neocalyptis insularis (Sebesi Id., Java), Epagoge occidentialis, Homona intermedia, H. scutina, Cacoecia allcica, Syndemis miae, Eboda discobola, E. spinosa, E. musculus, (all from Java), Protypanthes eutrachys and Schoenotenes helioconis (Sumatra). Homona wetan Diak. is a good species; Proactenis sisix Diak. ♀ described. "Harmologa" (= Isotenes) miserana Walk. appears to be confined to Australia; records from other islands concern new Isotenes spp. mentioned above. Clysiana opisthodonta Diak. is a synonym of C. reliquatrix (Meyr.), Homona picrostacta Meyr. a synonym of H. mubiferana (Walk.). Genitalia of both sexes, when available, and of neuration and head of Picroxena scorpiura Meyr. (Chlidanotidae) are figured. (A.D.)

354. Dowden, Philip B., W.D. Buchanan, & V.M. Carolin, "Natural-Control Factors Affecting the Spruce Budworm." Jour. Econ. Ent., vol.41: pp.457-464. June 1948. Detailed parasite data, including valuable lists of primary and secondary parasites.

355. Dufrane, Abel, "Pieridae". (In French). Bull. Ann. Soc. Ent. Belgique, vol.83: pp.46-73. 28 Feb. 1947. Describes as new: Leptosia medusa f. houzeaui (Ivory Coast), Pieris melete f. tonkinensis (Tonkin), Mylothris nubila f. wansoni (locality not given), M. agathina f. maureli (Ethiopia), Colotis mathieui (Belgian Congo), C. antevippe f. subgavisa (L. Congo), C. paradoxa (Belgian Congo), C. auxo race harrarensis (Ethiopia), C. vreuricki (Congo), Hebomoia glaucippe formosana f. transiens (Formosa), Catopsilia f. florella f. inornata (Guinea) & f. ornata (Sikkim), C. florella gnoma f. transiens (Tonkin), Terias trujilensis (Peru), T. joannisi (Peru), Colias minuscula f. peruviensis (Peru). In addition, at least 58 new aberrations and 5 new seasonal forms are named. It is difficult to find any genuine usefulness to science in this paper. By M. Dufrane's system, one could hardly fail to catch scores of "new aberrations" in a single day in Colorado, all of which M. Dufrane would presumably wish to name formally, designating holotypes, etc. There are many shaky points. For example, "ab. lambillioni" of Colias elis is a whitish female "semblable du Canada, sans nom de localité précise" - not even the Continent definitely known! Some supposed races named from uniques!

356. Fisher (Richardson), K.J., "Some Geographical Notes on West China Localities." Entomologist, vol. 81: pp.192-195, 213-219, map. Aug., Sept. 1948. Locates accurately a large number of important historical localities of Chinese Lepidoptera.

357. Fleming, Henry, "A New Genus and Species of Orneodidae (Moths) from Rancho Grande, North-central Venezuela." Zoologica (N.Y.), vol.33: pp.39-42, pl.1. 20 Apr. 1948. Describes in detail as new: genus ALINGUATA and lone species neblina (Rancho Grande). Drawing and photos of types.

358. Fox, Richard M., "Two new Ithomiinae in the Schaus collection (Lepidoptera: Nymphalidae)." Journ. Wash. Acad. Sci., vol.38: pp.315-316, 2 figs. 15 Sept. 1948. Describes as new and figures: Pteronymia schausi (Colombia), Hypoleria meridana (Merida, Venezuela).

359. Fukaya, M., "The fundamental study on the forecast of Rice Borer, Chilo simplex Butler (preliminary report)." (In Japanese). Nogaku Kenkyu(Report of the Ohara Institute for Agricultural Research), vol.37: pp.23-26. June 1947. (T.S.)

360. Gardner, J.C.M., "Notes on Pupae of the Noctuidae." Proc. Roy. Ent. Soc. Lond. (B), vol.17: pp.84-92, 12 figs. 18 June 1948. Keys pupae of subfamilies of Noctuidae (= Phalaenidae), with descriptions, keys, figures of some Indian species.

361. Hayashi, K. & T. Niimura, "Note on the egg laying habit of Argynnis paphia paphioides But. (Nymph.)." (In Japanese). Zephyrus,vol.9:p.294. June 1947. (T.S.)

362. Herwarth von Buttenfeld, H.W., Hebben Colias croceus Fourer. en de variaties uit de helice-groep verschillende vlieguren?" (Do C.c. and the varieties of the h.-group fly at different hours?" (In Dutch). Entom. Berichten, vol.12: p.249. 1 July 1948. In warm hours of the day mostly pale coloured varieties are on the wing. (A.D.)

363. Ishibashi, Y., "Note on Graphium doson albidus Wil. captured in Nagasaki Pref., Jap. (Papilion.)" (In Japanese). Zephyrus,vol.9: pp.293-294. June 1947.(T.S.)

364. Itô, S., (Choaspes benjamini japonica Mur. attracted to the electric light (Hesper.).) (In Japanese). Zephyrus, vol.9: p.294. June 1947. (T.S.)

365. Kapur, A.P., "A Note on the Genus Epina Walker (Lep.-Pyral.)." Entomologist, vol.81: p.191. Aug. 1948. Diatraenopsis Dyar & Heinr. sunk as synonym of Walker's Epina, with D. differentialis a synonym of E. dichromella. Confusion resulted from Walker's failure even to mention locality of dichromella.

366. Kibe, K., "Capturing of Zizina otis sylvia Nak. near Nakatsu, Jap. "Lycaenidae)." (In Japanese). Zephyrus, vol.9: pp.291-292. June 1947. (T.S.)

367. Kibe, K., "Larvae of Lampides boeticus L. attended by ant, Lasius niger." (In Japanese). Zephyrus, vol.9: p.294. June 1947. (T.S.)

368. Kibe, K., "Pieris rapae crucivora Boisd. attracted to electric light(Pierid.)." (In Japanese). Zephyrus, vol.9: p.294. June 1947. (T.S.)

369. Lempke, B.J., "Trekvlinders in 1946." (Migration of Lepidoptera in 1946). (In Dutch). Entom. Berichten, vol.12: pp.234-239. 1 May 1948. 7th annual report on migration of Lepidoptera in Holland completed. (A.D.)

370. Ludwig, Daniel, "Relation between Lipid Content of Cuticle, Duration of Diapause, and Resistance to Dessiccation of Pupae of the Cynthia Moth." Physiological Zoology, vol.21: pp.252-257. July 1948. Removed lipids by immersion in ether; found no effect on diapause but some loss of water and increased mortality from moulds as results.

371. Matsuzawa, H., "Notes on biology of Chilo simplex Butler and Schoenobius incertellus Walker." (In Japanese). Ann. Miyazaki Linn. Soc., vol.12: pp.5-8. May 1948. (T.S.)

372. Moriya, Y., "Two rare butterflies in Ogaki City and its vicinity." (In Japanese). Zephyrus, vol.9: p.290. June 1947. Records Zizina otis sylvia and Danaus tytia niphonica. (T.S.)

373. Nakajima, S. and K. Shimizu, "Bionomic studies on an injurious insect of sweet potato, Anophia leucomelas L." (In Japanese). Danchi-Nogaku (published from Miyazaki Agricultural College), vol.1: pp.55-57. June 1948. (T.S.)

374. Nakamura, M., "Abnormal venation in Pieris melete Men. and Aporia crataegi Linné." (In Japanese). Coll. and Breed., vol.9: p.99. May 1947. (T.S.)

375. Needham, James G., "Ecological Notes on the Insect Population of the Flower Heads of Bidens pilosa." Ecological Monographs, vol.18: pp.431-446. July 1948. Includes 10 spp. of moths, mostly micros.

376. Niimura, T., "Capturing of Melanitis leda in Chiba Pref., Jap. (Satyr.)". (In Japanese). Zephyrus, vol.9: p.289, 1 fig. June 1947. (T.S.)

377. Niimura, T., "A migrating Danaus chrysippus in Nakatsu City, Jap. (Danaidae)." (In Japanese). Zephyrus, vol.9: p.292. June 1947. (T.S.)

378. Niimura, T., "A revision of the species of Pyrgus in Japan (Lep., Hesper.)." (In Japanese). Matsumushi, vol.2: pp.110-112. Mar. 1948. P. zona Mab. dropped as a synonym of P. maculatus Brem. & Grey by rearing experiments. Zona is merely a summer form of maculatus. P. bieti tokachiana Mats. also sinks under P. maculatus. (T.S.)

379. Okamoto, D.,"The Life-history of Elcysma westwoodi Vollenhoven(Lep.) a cherry-tree pest." (In Japanese). Matsumushi, vol.2: pp.52-55. Sept. 1947. (T.S.)

380. Okamoto, D., "Some Notes on Pieris rapae L. in Corea." (In Japanese). Biosphaera, vol.1: pp.171-175. Oct. 1947. (T.S.)

381. Picard, J., "Les Hesperiidae du département du Gard d'après les chasses de R. Gaillard." (In French) Lambillionea, vol.48: pp.25-30, 34-42. Apr., June 1948. Records 21 spp. from Gard. Describes as new: Pyrgus carthami race nemausensis (Nîmes), P. serratulae race arvernensis (La Séyreyrède), P. bellieri race gaillardi (Nîmes), Ochlodes ventatum race concoulensis (Concoules) and four "individuals formes".

382. Saito, S., "Capture of Hypolimnas misippus L. at Matsumoto, Cent. Honshu, Jap.(Nymph.)." (In Japanese) Mushi Shizen (Tokyo), no.18: p.91. Apr. 1948. (T.S.)

383. Shirôzu, T., "A new locality of Neptis philyra excellens But. in Kyûshû, Jap. (Nymphal.)." (In Japanese). Zephyrus, vol.9: p.292. June 1947. (T.S.)

384. Shirôzu, T., "A new locality of Lethe marginalis Mot. in Kyûshû, Jap. (Satyr.)." (In Japanese). Zephyrus, vol.9: pp.292-293. June 1947. (T.S.)

385. Shirôzu, T., "Two butterflies new to the fauna of the Gotô Islands, Japan." (In Japanese). Zephyrus, vol.9: p.293. June 1947. Records Euchloe scolymus and Precis orithya. (T.S.)

386. Shirôzu, T., (Note on the generation of Papilio machaon hippocrates Fel. at the low land of Fukuoka and its vicinity). (In Japanese). Zephyrus, vol.9: pp.295-296. June 1947. (T.S.)

387. Sibatani, A., "On the generic name of Penthema formosanum (Rothschild) and its systematic position (Satyr.)." (In Japanese). Zephyrus, vol.9: p.288. June 1947. From the characters of the male genitalia, P. formasanum is shown to be a satyrid and not a nymphalid as treated before. (T.S.)

388. Sperry, John L., "Southwestern Geometrid Notes and New Species. II." Bull. Brooklyn Ent. Soc., vol.43: pp.88-93. June 1948. Describes as new: Sericosema meadowsaria, Phengommataea mabelata, Antepione hewesata (all from Oak Creek Canyon, Ariz.). First description of female of Parexcelsa ultraria. Notes on 3 other spp.

389. Takahashi, Y., "Note on the collecting of Arhopala ganesa loomisi Pryer in Mt. Kiyosumi in Chiba Pref., Jap. (Lycaen.)." (In Japanese). Zephyrus, vol.9: pp.285-288, 1 fig. June 1947. (T.S.)

390. Takatsuka, M., "A locality of the red-marked form of Graphium doson albidus Wil. in Kochi Pref., Japan. (Papilionidae)." (In Japanese). Zephyrus, vol.9: pp.290-291. June 1947. (T.S.)

391. Terayoshi, F., "Capturing of Badamia exclamationis Fab. in Shiga Pref., Jap. (Hesper.)." (In Japanese). Zephyrus, vol.9: pp.289-290, 1 fig. June 1947. This is the first record of this tropical butterfly migrating into Japan. (T.S.)

392. Timon-David, Jean, "Pigments des Insectes." (In French). L'Année Biologique, vol.51: pp.237-271. Sept.-Oct.1947. Detailed discussion, mainly chemical, including many pigments in Lepidoptera. Very extensive bibliography.

393. Toxopeus, L.J., "Een bijdrage tot de kennis van Actias maenas." (A contribution to the knowledge of A.m.). (In Dutch). Chronica Naturae, vol.104: pp. 60-62. Feb. 1948. A report on comparative rearing of material from Java and Sumatra respectively, under same conditions. Eggs and larvae were alike. Duration of development was distinctly different: Javanese material almost 2 months, Sumatran 4-6 weeks. The Javanese moths were larger consequently. An annotated list of sub-species is added. (A.D.)

394. Umeya, K.,"Note on the breeding of Polygonia c-album hamigera But.(Nymph.)." (In Japanese). Coll.and Breed., vol.9: p.112. May 1947. This is the first record of P. c-album breeding in Japan. The food-plant observed is Celtis sinensis var. japonica.

395. Waloff, N., M.J. Norris, and E.C. Broadhead, "Fecundity and Longevity of Ephestia elutella Hübner (Lep., Phycitidae)." Trans. Roy. Ent. Soc. Lond., vol.99: pp.245-268, 6 figs. 25 June 1948. Fecundity increased and longevity decreased with increase in temperature. Other life history factors also analyzed experimentally.

396. Weiss, Harry B., "The New York Entomological Club and 'Papilio'." Journ. N.Y. Ent. Soc., vol.56: pp. 119-136. June 1948. Detailed history of the famous Club and its members, including Henry Edwards, Jacob Doll, A.R. Grote, Thos. L. Mead, and other lepidopterists. Also history of short-lived journal, "Papilio".

397. Wellington, W.G. & W.R. Henson, "Notes on the Effects of Physical Factors on The Spruce Budworm, Choristoneura fumiferana (Clem.)." Canadian Ent., vol. 79: pp.168-170. 12 Oct. 1948. Detailed correlation of weather and life of this pest moth. Valuable ecological data.

398. Wilmink, G.F., "Massaal optreden van Rhizedra lutosa Hb. in de N.O. polder". (Mass occurrence of R.l. in the Northeast Polder). (In Dutch). Entom. Berichten, vol.12: pp.246-247. 1 May 1948. Mass occurrence of lutosa observed in Holland in Sept.-Oct., 1947, possibly caused by very warm summer (A.D.)

Herman Strecker

BRIEF BIOGRAPHIES

16. Ferdinand Heinrich Herman Strecker (1836-1901)

Science and art are often distinguished by the statement that the former excludes emotion while the latter expresses it. Yet since emotion and reason are both essential parts of living they have a close relationship. F.H. Herman Strecker must have found this closeness particularly true in his own life for he was both artist and scientist. His inherited talent for the artistic profession was expressed in sculpture, architecture and design. His father, who had been a well-known sculptor in Germany, came to America in 1835 and settled in Philadelphia. Herman Strecker was born on March 24, 1836, in that city. When he was twelve years old the family moved to Reading, Pennsylvania, where he attended the public schools. He showed his interest in both art and science as a boy,and after his father's passing in 1856, he took up the parental profession.

The scientific leanings of this famous lepidopterist also had ancestral roots, for three of Strecker's uncles were naturalists. As a young man, he studied natural history, particularly the Macrolepidoptera, at the Academy of Natural Sciences of Philadelphia. Of those days he later wrote (1878): "I shall never forget when a little boy how my heart bounded when one day Prof. Jos. Leidy took me into the basement of the...Academy.., and pointing to the books on Entomology told me I had permission to examine them. Great God what a Heaven opened to me! ... How I now reveled in the treasures of old Cramer, in Donovan,...in indefatigible Hübner, and in dust ad libitum. How I gazed wonderstruck on the great African Saturnidae depicted by the old authors, never dreaming that I should ever become the happy possessor of such treasures." Throughout Strecker's life scientific work had to be done at night or on holidays, yet in addition to his papers, he amassed a large and valuable collection,obtaining many of the specimens on his trips to Mexico, the West Indies, and Central America, where he went primarily to study ancient Aztec architecture.

Strecker's principal work was the voluminous "Lepidoptera Rhopaloceres and Heteroceres, Indigenous and Exotic, with Descriptions and Coloured Illustrations." This was published in fifteen parts and four supplements, during the period 1872-77. The fifteen colored plates are among the remarkable aspects of the series and have a laborious history. When the plates were being done Strecker was a poor man and could not afford fifteen separate lithographic stones on which to make his drawings. So one plate was completed, sent to the publishers and printed, and returned to the artist, who repolished the stone and drew the second plate. This was repeated until all the plates had been printed.

Strecker described several hundred new species, many of which were published in his two large works. His thoroughness is shown in the completeness of the references in them. In his second major work, "Butterflies and Moths of North America" (1878) are included detailed instructions for rearing, collecting, preparation, classifying, packing, etc. He was awarded an honorary degree of Doctor of Philosophy by Franklin and Marshall College for his scientific contributions.

Strecker has been variously described by his associates as cordial, affable, genial, and modest about his talents. However, it is admitted that another side of his personality was his intense desire to build up his collection of Lepidoptera, and he evidently resorted to devious means, in some cases, to obtain specimens. Two of his characteristic sayings were: "I don't let my right hand know what my left hand is doing", and "It is human nature to think of ourselves first, last and always." On the other hand, he was always enthusiastically interested in helping and advising beginning lepidopterists, and had a tremendous number of correspondents all over the world. He said of his book on North American Lepidoptera that it was written in order to furnish plain instructions and information to the beginner, and hoped it would increase his correspondence with students and collectors. His philosophy was: "Never...give a cold look or word to those who hunger after the truths of science; foolish questions may be asked you, and your patience at times taxed, but remember the time, far back, when you too were groping in the dark... Remember how a hand was reached out to direct you aright from gloom and uncertainty to light and knowledge; show now your gratitude for that kindness, in the only way in your power, by doing for some other one who is humbly striving, that which at a time long passed, was done for you."

At his passing on Nov.30, 1901, at the age of 65, in Reading, Pa., he left a wife and a son and daughter. His Lepidoptera collection is now in the Chicago Museum of Natural History. The above photograph, previously unpublished, was kindly loaned by Dr. A.B. Klots of New York.

Jeanne E. Remington

NOTICES BY MEMBERS

Wanted:Argynninae,Papilionidae,diurnal swamp-loving moths. Offer in exchange RARE HUNGARIAN LEPIDOPTERA of any group. Dr. L. Gozmány, Budapest XII, Györi ut 1. II. 14., HUNGARY.

PAPILIO ARISTODEMUS PONCEANA for sale and exchange. Also all other south Florida and Florida Keys Lepidoptera for exchange. Write: H.L. King, 4618 Abercorn St., Savannah, Ga.

DANISH LEPIDOPTERA offered in exchange for papered Rhopalocera, Sphingidae, Arctiidae. A.Andersen, Odensegade F,Ø,Copenhagen,DENMARK.

Wanted immediately: All species of the genus ANNAPHILA Grt. and forms of AXENUS ARVALIS Grt. Accurate ecological data desired. Offer in exchange Phalaenidae of S. Calif. & living pupae of Hemileuca nevadensis californica Wgt. C.I. Smith, 161 So. 16th St., Apt. 1-B, Richmond, California.

WANTED: Wasps(Hymenoptera: Vespoidea, Sphecoidea,Chrysidoidea), particularly Psammocharidae (Spider-Wasps) and Mutillidae(Velvet "Ants"), of the world. Will collect Lepidoptera or other insects in exchange. David G.Shappirio, 4811 17th St., N.W.,Washington 11, D.C.

Wanted from collectors or museums: any material of PEREUTE, ARCHONIAS and LEODONTA (Pieridae), for determination and distributional data to be used in revisions. It will be returned promptly and handled carefully. Please write before sending shipment. F.M. Brown, 326 Burns Bldg., Colorado Springs, Colo.

WANTED: for taxonomic study, any U.S. species of Hesperioid genus MEGATHYMUS. I have for exchange many species of North American Macrolepidoptera. Paul R. Ehrlich, 538 Academy St., Maplewood, New Jersey.

NAMED RHOPALOCERA & PARTIALLY NAMED HETEROCERA & MICROLEPIDOPTERA offered in exchange for Microlepidoptera of South Asia. Collections of such Microlepidoptera also solicited for identification. Dr. A. Diakonoff, Zoölogisch Museum, Buitenzorg, Java, D.E.I.

SPEYERIA DIANA and many other scarce Lepidoptera available for exchange for desired spp., esp. of Papilio, Megathymus, Sphingidae, etc. William F. Duhlmeier, 2535 Indian Mound Ave., Norwood 12, Ohio.

In exchange for Philotes of the world, MY ENTIRE COLLECTION of 5,000 specimens of western Lepidoptera. Will send list of check list nos. available. Let me know your localities. R.H. Mattoni,V-29 Terr. War Housing, Richmond, Cal.

ENTOMOLOGICAL EQUIPMENT FOR SALE. Quality material at quantity price. Write for catalog. Bio Metal Associates, P.O. Box 346, Beverly Hills, Calif.

Japanese Rhopalocera offered in exchange for needed specimens from S. & Cent. America & S. Pacific Is. (list available on request). T/5 R.J. Jablonski, Med. Det., 13th F.A. Bn., A.P.O.24, Unit 4, c/o P.M.,San Francisco,Cal.

PLEASE NOTIFY THE NEWS EDITORS OF CHANGES OF ADDRESS PROMPTLY

BUTTERFLIES OF THE BELGIAN CONGO AND BELGIUM offered in exchange for North American butterflies (except Hesperiidae). S.G.Kiriakoff, 14 Universiteitsstraat, Ghent, BELGIUM.

Will trade a ROTHSCHILDIA ORIZABA or a ROTHSCHILDIA ARETHUSA for a Samia rubra or a Samia columbia (both males). D.H. Kistner, 1142 Cheyenne Dr., Cincinnati 16, Ohio.

FOR SALE: common MEXICAN BUTTERFLIES in good condition. Supply limited,order early. Write: L.S. Phillips, Loyola University Medical School, 706 S. Wolcott Ave., Chicago, Ill.

In papers with data. CATOCALA texana, amestris and westcotti, pretiosa, mira, verilliana, ahola and other Texas species. For cash or exchange. Complete list on request. L.H. Bridwell, Forestburg, Texas.

CASH PAID FOR BUTTERFLIES of almost any species from any part of the world. Only perfect specimens with data wanted. Will buy 1 or 100 of any species,or contract for season's catch. A. Glanz, 289 E. 98th St., Brooklyn 12, N.Y.

WANTED FOR STUDY: PAPILIONIDAE OF WORLD, especially P. glaucus group (incl. eurymedon, daunus, etc.); also machaon and thoas group and Nearctic Parnassiidae. Buy or will exchange U.S. Macrolepidoptera. Kent H. Wilson, 430 Ridgewood Road, Fort Worth 7, Texas.

LIVING MATERIAL

LIVING COCOONS of Lepidoptera from India for sale as follows: Attacus atlas -50¢, A. cynthia -12¢, A. edwardsi -50¢, Antheraea mylitta -40¢, Leopa katinka -25¢, Caligula cachara - 25¢ each. Send with U.S.A. orders permit from U.S. Dept. Agriculture. Himalayan Butterfly Co., Shillong, Khasi Hills, INDIA.

Living pupae of Eacles imperialis and Papilio troilus offered in exchange for other specimens, including papered Papilio, or for sale at 25¢ each. Mrs. Vonta P. Hynes, 152 Meachem Ave., Battle Creek, Mich.

FOR SALE: cocoons of Telea polyphemus, Callosamia promethea (10¢ ea.,$1 doz.), Automeris io (15¢ ea.,$1.60 doz.), Actias luna (25¢ ea., $2.50 doz.), Attacus cynthia (20¢ ea.), Anisota rubicunda (5¢ ea.,50¢ doz.), Ancana mylitta (50¢ ea.). Bombyx mori eggs (50¢/100). E.A.Ferguson,1213 Bellflower,S.W.,Canton 4,Ohio.

WANTED: Living pupae of any species of Colias, esp. eurytheme-philodice, in exchange or for purchase. Carl W. Gottschalk, Harvard Medical School, 25 Shattuck St., Boston 15, Mass.

Can offer living pupae Rothschildia orizaba in exchange for pupae Platysamia columbia or gloveri and Callosamia angulifera. R.L. Halbert, 1201 W. 30th St., Los Angeles 7, Calif.

Wanted: EGGS OR COCOONS OF SATURNIIDAE, esp. Platysamia, for rearing & hybridization stock. Offer in exchange pupae of several genera, including Papilio, Parnassius, Speyeria, Polites, Arctia, and Platysamia euryale, or will buy. D.P. Frechin, 1504 N. Lafayette,Bremerton,Wash.

QUESTIONS AND ANSWERS

Q. "Will you please suggest two or three good general books on Lepidoptera as a whole, in any languages?"

A. Such books are scarce. For the world point of view I know only: M. Hering, Biologie der Schmetterlinge, Berlin, Julius Spring, which is very strong on biology in the strict sense; the Lepidoptera section of Kukenthal's Handbuch der Zoologie, by Zerny and Beier (vol.iv, part 2, pp.1554-1728),which is very strong on morphology and presents a world-classification;and the great series of volumes of Seitz' "Macrolepidoptera of the World", which covers the species, and figures the majority. The Butterflies are complete, the "Bombyces" complete except for a few pages on the American fauna, the Noctuidae and Geometridae far from complete when the second world war stopped publication.

Q. "Can you suggest references regarding the Agrotid Achaea janata, recently introduced to Hawaii on Castor Bean, concerning its occurrence and biology elsewhere?"

A. Literature appears frequently under the name of Achaea or Ophiusa melicerta. See Maxwell-Lefroy,Mem. Ind. Dept. Agr. ii, 59-77, which is the basic reference; also Fletcher's "Some South Indian Insects", p.286. It appears almost every year in the "Review of Applied Entomology".

Q. "Is there any moth in Madagascar with a proboscis as much as eleven inches long? There is an orchid there which seems to require such a moth for pollination."

A. The longest reported by Rothschild and Jordan (Nov. Zool. ix, supplement, p.32) is Xanthopan morgani, with a tongue 8 inches long; they thought that this would serve to reach the honey "in short and medium sized nectaries", and so would reach the nectar often enough to keep trying, and fertilize the flowers.

W.T.M. Forbes

The second volume of Professor Forbes' "Lepidoptera of New York" has been published and will soon be reviewed in the News, with information on how to obtain it. Also to be reviewed soon is Dr. Annette Braun's important new revision of the family Elachistidae.

In the review of French's Butterfly Guide (Lep. News 2: p.55) we gave the date of the 1st edition as "1890". However, Dr. Meiners has found that the first "1st edition" was published in 1885, as French himself wrote. The 1890 issue was at least a new printing.

We are fortunate in having two additional cooperators preparing abstracts for "Recent Literature on Lepidoptera". Takashi Shirôzu (see p.95) will scour the Japanese literature. C.F. dos Passos will cover the Canadian Entomologist, Proceedings Ent. Soc. Washington, and Journal New York Ent. Soc. Each abstract not prepared by the News editor is followed by the abstractor's initials in parentheses.

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ADDITIONS TO THE 1948 MEMBERSHIP LIST

Carls, E.W.,1985 E.Phillips Blvd.,Pomona,Calif.
Evey, J.A., Benson, Illinois.
Gaillard, F., 5 Cité du Midi, Paris 18, FRANCE.
Gibbs, J. Paxton, 222 Curtis East, Denison University, Granville, Ohio.
Henriksen, Mrs. Emily, Orcas Island, East Sound, Wash. LEPID. Coll. Ex.
Hill, Charles, 210 E.Glen Oaks Blvd.,Glendale 7, Calif. Phalaenidae.
KRAFT, GUSTAVE, 1421 Hutchinson, Chicago 13,Ill.
Lempke, B.J., Oude Yselstraat 12^{III}, Amsterdam-Zuid, 2, NETHERLANDS. RHOP. & MACRO: Dutch. Biology, Migration, Distribution, Variation, Heredity, Coll.
*Munroe, Eugene, Institute of Parasitology, Macdonald College, Quebec, CANADA. LEPID: esp. Pyralidae and West Indian RHOP. Coll. Ex.
Sørensen, Arne, Hellerupvej 10, Hellerup Bogbinderi, Hellerup, DENMARK.
Wilcox, LeRoy, Speonk, Long Island, New York.
Wilson, F.E., 28 Ferncroft Ave., E. Malvern, (S.E. 5), Victoria, AUSTRALIA. RHOP: esp. Hesperiidae. Coll. Ex.

CHANGES OF ADDRESS:
Michener, Charles D. (Dr.), Dept. of Entomology, Univ. of Kansas, Lawrence, Kansas.
Plomley, Mervyn, 578 Dunsmure Rd., Hamilton, Ontario, CANADA.

The annual dues statements will be mailed out with the December News, but meanwhile we wish to announce that the 1949 dues for Regular Members will be $2.00 and for Sustaining Members a minimum of $4.00. The small increase will provide urgently needed typographic help for the enormous task of preparing the final copy of each News for the lithoprinter, without reducing the size of News volumes.

THE LEPIDOPTERISTS' NEWS is the monthly periodical of The Lepidopterists' Society. Membership is open to anyone interested in the study of butterflies & moths. The 1949 dues, including subscription to the NEWS, are $2.00 for Regular Members and $4.00 or more for Sustaining Members. Please make remittances payable to : Charles L. Remington.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON
Vol. II December 1948 Number 9

SOME NEEDS OF NORTH AMERICAN LEPIDOPTEROLOGY

In founding the Lepidopterists' Society and the News in 1947, H.K. Clench and the writer set out to meet the need for a free interchange of knowledge among the great number of people in all parts of the world who devote some time to the study of moths and butterflies. With enthusiastic cooperation from a multitude of members the course of progress has been relatively smooth and satisfactorily rapid. Several other projects which North American lepidopterists have needed and awaited for too many years need to be considered now.

First, the time is ripe for the comprehensive cooperative work on North American butterflies which was tentatively outlined by F. Martin Brown in the October News and which is now a well-established project. Its progress will be reported frequently in the News. Two primary needs are for accurate field notes and funds for colored plates.

Second, there is a pressing need for a complete bibliographical catalogue of North American Lepidoptera. The last one was published many years ago and has long been so out-of-date as to be of very limited value. A work comparable to the nearly completed catalogue of Hymenoptera would be used widely as soon as published. It would, of course, be a cooperative work. The Lep. Soc. could sponsor such an undertaking and have it ready for publication, probably within four years, if funds for publication could be obtained or guaranteed. Until this support becomes certain, there is no use in launching the plan.

Third, a reasonably comprehensive book on American moths, profusely illustrated with colored plates, has been needed for a long time. Holland's Moth Book, published in 1903, is so out-of-date and so filled with original errors that it no longer is very useful. A current, accurate work of the same sort would immediately be in great demand.

Fourth, a centrally-coordinated, vigorously prosecuted study of butterfly and moth migration is now assured of significant geographic coverage by the large membership of the Lep. Soc. A program somewhat like bird banding needs to be planned and launched.

Fifth, a Lep. Soc. library should be established which would send out to members books, periodicals, and reprints for their use without a loan fee.

The News editors solicit correspondence on any of these matters.

C.L. Remington

THE BUTTERFLIES NORTH OF MEXICO

Current Developments

At the time of writing, cards are still being received from Society members who wish to cooperate on the project. Already the response has been enthusiastically affirmative.

The following appointments have been made thus far. The others will be announced from time to time, and in some cases modifications may be necessary before the final writing begins for the respective sections.

SENIOR COLLABORATORS

Danaidae -- Dr. Richard M. Fox, Jr.
Dept. of Entomology
Carnegie Museum
Pittsburg 13, Pa.

Satyridae -- F. Martin Brown
Fountain Valley School
Colorado Springs, Colo.

Pieridae -- Dr. Alexander B. Klots
Dept. of Biology
17 Lexington Avenue
New York 10, N.Y.

AUTHORS

All Danaidae -- Dr. R.M. Fox, Jr.

Minois -- F. Martin Brown

Megathymus -- P.S. Remington, Jr.

A tentative schedule has been prepared to plan the dates of final manuscripts and of actual publication of each fascicle.

Information wanted:

Dr. Fox, who is the specialist preparing the manuscript for the DANAIDAE, needs information about the occurrence of species in the genus Danaus in the United States. Will all collaborators send him the data that they have available. Especially wanted are breeding localities for berenice and records of strays in the non-breeding areas, migration data on plexippus, parasite and predator data. Has anyone definite data on bird predators on Danaus? Dr. Fox wants to see material from the south Atlantic coastal area and from the Gulf coastal area, especially from off-shore islands. Please communicate your information directly to Dr. Fox.

F.M. Brown
Coordinating Editor

SMITHSONIAN INSTITUTION
SEP 15 1949
NATIONAL MUSEUM

PRINCIPLES OF TAXONOMY- V. NATURAL AND ARTIFICIAL CLASSIFICATION

The first classifiers of plants and animals probably sought no more than a simple system for conveniently sorting the living forms into readily recognizable groups. Even today, some of these wholly superficial groupings are to be found in recent books written for popular consumption. A conspicuous example is a widely circulated book on American wild flowers in which all red flowers are grouped together, all blue-flowered plants, all yellow-flowered plants, and so on. Various writers prior to Carl von Linné began to assemble plants and animals into a "natural" system. By "natural" they meant some vague concept of relationships presumed to have originated when, according to Biblical statements, God created all species of living things and placed them in the Garden of Eden. Some of the characters binding "natural" groups were the number of stamens in flowers, the absolute presence or absence of wings, the number of pairs of wings, the presence or absence of leg-like appendages, and so on.

The possibility of the appearance of new species, after the original Biblical creation, became well established in the first half of the 19th Century and was perhaps most advanced by the brilliant French zoologist, Jean Baptiste Lamarck. It was believed that the environment changed the individuals of a species and that these changes could then be inherited by the offspring and fixed in the species. Thus, two diverging populations would be molded by their different environments and finally become separate species. This concept was nebulous and unconvincing until the epochal work of Charles Darwin, the first of which appeared in 1858. Darwin crystallized a clear basis for considering a system of classification truly "natural". Since then taxonomists have been refining and extending its application. It is of particular interest to note that a surprisingly large proportion of the classification of Linné and his best successor, Anders Iahan Retzius, remains valid when measured by modern "natural" classifiers.

In the present-day sense NATURAL RELATIONSHIPS ARE THOSE BASED ON COMMON ANCESTRY -- the sort of arrangement used for human family trees or lineage charts. There are several means by which evolution (and therefore common ancestries) may be studied. Especially dependable is evidence obtained from: 1) comparisons of structure; 2) tracing development in the embryo; 3) fossil specimens; and 4) genetic studies of cross-breeding. Where two or more lines of approach point to the same answer it is reasonably certain to be correct. Some examples of natural characters will elucidate this discussion. Feathers are characteristic of all members of the Class Aves (birds), and no other animals have true feathers. Among the animals without backbones (invertebrates), the possession of aerial wings invariably places the flier in the Class Insecta, although some insects do not have wings. All butterfly larvae having osmeteria (special strong-smelling protrusible filaments) are descended from a common ancestor and therefore belong to the broad family Papilionidae (swallowtails and allies).

In modern usage ARTIFICIAL CLASSIFICATION GIVES A GROUPING OF SPECIES WHICH DO NOT HAVE A COMMON ANCESTOR DIFFERENT FROM THAT OF ALL OTHER SPECIES. It must be apparent to anyone that the grouping of all flying animals would be artificial, since bats, birds, and insects are obviously unrelated. Similarly the assembling of all insects with scales on the wings would be artificial, since mosquitoes, butterflies and moths, some weevils, bark lice and other unrelated groups have wings with scales. One of the most extensively used artificial groupings was the division of the Lepidoptera into Diurnals and Nocturnals; actually, hundreds or perhaps thousands of species of moths are normally diurnal (day-flying). A common artificial distinction between butterflies and moths is the fallacy that moths have thicker bodies; of course Geometridae and many other moths have slender bodies, whereas the Megathymidae and other skippers have heavy bodies.

Following are samples of a hypothetical artifical system and an actual natural system:

ARTIFICIAL SYSTEM

1. Family OCULIDAE - having "eye" spots.
   - Vanessa io
   - Minois alope
   - Automeris io
   - Strymon cecrops
   - larva of Papilio glaucus
   - larva of Pholus achemon

2. Family CAUDIDAE - having tailed hindwings.
   - Actias luna
   - Papilio machaon
   - Graellsia isabelae
   - Goniurus proteus
   - Strymon cecrops

NATURAL SYSTEM

1. Family LIBYTHEIDAE - palpi long (snout).
   - Libythea celtis
   - Libytheana bachmanii
   - Libytheana motya

2. Family SATYRIDAE - fore legs always degenerate.
   - Minois alope
   - Lethe portlandia
   - Pararge megaera
   - Erebia niphonica
   - Oeneis norna

3. Family PTEROPHORIDAE - hindwings deeply 3-cleft.
   - Stenoptilia zophodadactyle
   - Oxyptilus periscedactylus
   - Oidaematophilus monodactylus

Natural classification can only be based on PHYLOGENY, or ancestry. Although the reasons for phylogenetic arrangement of insects may not be readily visible to the non-specialist, we hope that no News reader will classify his specimens by grouping all white butterflies together or all hairy caterpillars together or all maple tree feeders together without realizing the phylogenetic artificiality of such an arrangement.

J.L. Remington

THE 1948 MEETING OF THE E.S.A.

The annual meeting of the Entomological Society of America for 1948 was held in New York City on December 13-16. As usual, the E.S.A. held its meeting jointly with the American Association of Economic Entomologists. Several papers on the program were of special interest to lepidopterists. Dr. William Hovanitz, of Wayne University, spoke on "Geographical differences in food specificity of butterflies", presenting one aspect of his studies, primarily on the northern species of Colias. Staley D. Beck, J.H. Lilly, and J.F. Stauffer, all of the University of Wisconsin, reported on "Nutrition of the European Corn Borer I. Development of a satisfactory purified diet for larval growth." If such artificial rearing media can be devised for larvae which normally feed on living plants, a great boost will be given to laboratory studies on butterflies and moths. Dr. Charles D. Michener, of the University of Kansas, discussed "Parallel evolution in saturniid moths." He illustrated his paper with the phylogenetic tree of the genera and subgenera of New World Saturniidae, a tree giving the results of his recent generic revision of Saturniidae. He showed the independent origin of some characters of saturniids in small parts of several unrelated branches of the family -- characters which now prove to be untrue guides to classification, although early workers had leaned heavily on them.

Among other papers which may interest News readers was a report by Dr. Henry K. Townes, of North Carolina State College, on the cooperative catalogue of the Nearctic Hymenoptera. With a number of specialists preparing different sections of this elaborate and invaluable catalogue, the manuscript appears to be nearing completion rapidly. The project has been in progress for a surprisingly short time. It reminds us of the urgent need for a complete catalogue of Nearctic Lepidoptera and also reminds us that such a job almost unavoidably must be undertaken by several cooperating authorities, rather than a single author.

Dr. Curtis W. Sabrosky, of the U.S. Bureau of Entomology & Plant Quarantine, spoke forcefully about the recent activities of the International Congress of Zoology in completely revising the International Rules of Zoological Nomenclature. Dr. Sabrosky criticized severely the apparently dictatorial and unannounced actions of Mr. Hemming, secretary of the International Commission, during the Paris meetings. There is clearly an overwhelming body of opinion, at least in the U.S.A., in opposition to the undemocratic manner in which the new Rules were forced through, and it is to be hoped that opportunity for wide consideration of the wording of the new Rules be permitted before they are issued as valid. Obviously, these "Rules" have no legal standing and must depend on general acclamation for their support and this support in turn depends on the soundness of the Rules from the viewpoint of as many interested taxonomists as possible.

At the E.S.A. business meeting there were reports on the recent Zoological Congress in Paris and Entomological Congress in Stockholm. Comments on the superb planning and administration of the Stockholm Congress were most enthusiastic. Quite a different view on the Paris meetings was expressed. The establishment of the new Journal of Insect Physiology was announced. The 1949 meetings will be in Tampa, Fla., during the 3rd week in December.

At the meetings this year we saw the following Lep. Soc. members and undoubtedly missed several others: Dr. A.E. Brower, Prof. E.O. Essig, Dr. W. Hovanitz, Dr. C.D. Michener, and Dr. Jose Oiticica F°.

*

The ENTOMOLOGICAL SOCIETY OF AMERICA is the one correlating society for all North American entomologists. The annual dues of $5.00 go mainly for a subscription to the Society's Annals, probably unexcelled by any other entomological journal in the world. We hope that all Lepidopterists' Society members in America who are seriously interested in research will see the value in membership in the E.S.A. All who wish to join the E.S.A. should write to the Lep. News editor for a membership application form.

C.L.R.

NOMENCLATURE NOTES

Referring to the information in the News for April, 1948, p.46, about the replacing by CTENUCHIDAE Kirby of the family names SYNTOMIDAE, AMATIDAE or EUCHROMIIDAE, it must be pointed out that the law of priority only concerns specific and generic names (Art.25 of the Rules) and accordingly it is irrelevant where family names are concerned. On the other hand, Art. 4 of the same Rules says: "The name of a family is formed by adding...to the stem of the name of its type genus". The oldest and best known genus of the family in question is Syntomis Ochsenheimer 1808 (= Amata Fabricius 1807); as selecting types by subsequent designation (see Recommendations, Art. 30 of the Rules) does not apply to families, it is reasonable to admit that the oldest genus is the type genus. The correct family name must, in the present case, be accordingly AMATIDAE.

S.G. Kiriakoff, Ghent, Belgium

*

Concerning the generic name of Limentis (Lep. News, vol.2: p.76), I have the following opinion. For the sibylla group (I think it must be called the camilla group in the strict sense), there is a good generic name, Parathyma Moore (Lep. Ind., vol.3: p.174, 1898), the type of which is sulpitia Cramer, an oriental species. Though sulpitia has been treated by many authorities as a species of Pantoporia auct., it is undoubtedly a member of the camilla group by the characters in venation, markings, as well as in male genital apparatus, and can never belong to Pantoporia auct. The following literature gives a useful key to this problem:

Hemming, F., 1934, "The Generic names of the Holarctic Butterflies", vol.1. London. (esp. pp.87-88).

Sibatani, A., 1943, "Über Einige Nymphaliden aus Nippon", Trans. Kansai Ent. Soc., vol. 13: pp.12-24, pl.1. (esp. pp.18-21).

Takashi Shirôzu, Fukuoka, Japan.

SUMMARY OF "A REVISION OF THE AMBER LEPIDOPTERA" BY N.J. KUSNEZOV*

The Baltic Amber has provided entomologists with the only large series of perfectly preserved specimens of very ancient insects. The age has usually been considered to be Oligocene (perhaps 40 million years old), but Kusnezov believed it to be of "the Eocene epoch at least" (about 60 million years old), because the only Baltic Amber in its original matrix is Eocene and all amber in Oligocene beds was secondarily deposited there. The Baltic Amber is presumed to be fossilized resin from pine trees which occurred in north-central Europe. Its entomological significance comes from the fact that great numbers of small insects were trapped in the sticky resin and became embedded in the lumps. The amber is fairly clear so that it is possible to examine microscopically every tiny hair on many of the insects. These scientific treasures, "mounted" by Nature, have made possible the discovery of many significant facts, such as the presence at least 40 million years ago of certain ants differing in no perceptible way from species living today. On the other hand, several extinct families of spiders have been found in the amber beside other representatives belonging to living genera.

The Lepidoptera of the Baltic Amber had been studied to some degree by earlier workers, but Kusnezov obtained a fairly extensive unstudied collection and considerably extended the knowledge of the fossil moths (no butterflies were in his collection). He described as new all the following genera and species, but noted that all the new genera are "rather closely related to the recent genera" of the same families:

ERIOCRANIIDAE
- Electrocrania immensipalpa

TINEIDAE
- Tillyardinea eocenica
- Martynea rebeli
- Dysmasiites carpenteri
- Scardiites meyricki
- Proscardiites martynovi
- Palaeoscardiites mordvilkoi
- Glessoscardia gerasimovi

LYONETIIDAE
- Prolyonetia cockerelli

OECOPHORIDAE
- Glesseumeyrickia henrikseni
- Paraborkhausenites innominatus

GELECHIIDAE
- Oegoconiites borijacki
- Symmocites rohdendorfi
- Gelechiodeorum 2 spp.

TORTRICIDAE
- Electresia zalesskii

PYRALIDIDAE
- Glendotricha olgae

It is striking to note the prevalence of primitive groups. While the Baltic Amber rarely preserved even medium-sized insects, this would not alone account for the great preponderance of the "Micros", because there are very many sufficiently tiny Geometridae, Phalaenidae, Arctiidae, and Notodontidae. Their absence might be explained by their rarity in the pine forest at that time, their habits which might not bring them into contact with the gummy pre-Amber, or their rarity because they were new evolutionary lines not yet diversified and abundant.

That the abundance of "Micros" was not only found in Kusnezov's material is shown by the following list of Baltic Amber species which Kusnezov compiled from preceding papers as well as his own:

Micropterygidae -	1
Eriocraniidae -	2
Tineidae -	10
Incurvariidae -	1
Adelidae -	3
Lyonetiidae -	1
Oecophoridae -	14
Gelechiidae -	4
Hyponomeutidae -	7
Eucosmidae -	1
Phaloniidae -	2
Pyralididae -	1
Psychidae -	1
Lycaenidae -	1

Presuming that the Lepidoptera appeared before the wide diversification of the flowering plants, Kusnezov reasoned that the larvae of the earliest moths fed on mosses, fungi, dead vegetable material, and the inside of stems. His evolutionary sequence was expressed thusly: "-- feeding on mosses(Micropterygidae), → on fungi (Scardia), → on vegetable detritus under tree bark, undoubtedly mixed with fungus mycelia (Oecophoridae, Aegeriidae), → within plant tissues deprived of chlorophyll (Cossidae), → mining in chlorophyll-liferous tissues (very many Tineodea), → free feeding on the latter (the greater part of the order with Noctuodea at the head)."

The text of this scholarly paper is followed by an extensive bibliography. The plates depict, perhaps as well as possible, the specimens studied. The main text is in Russian but there are several English summaries of the most important parts.

C.L. Remington

*135 pp., 31 pls. Édition de L'Académie des Sciences de L'Urss. Moscow, 1941.

TECHNIQUE NOTE

A collecting item worthy of mention is the butterfly collecting can. This valuable field device is merely a can with belt clip and hinge top soldered on, the outside dimensions being approximately 2½" x 3½" x 4". Inside of the can strips of paper 3½" wide are folded to form corrugations of the 4" depth of the can. About 50 such corrugations can be fitted to a can, the compartments so formed being able to hold many specimens during the day's collecting. The cans can easily be made from a used small cocoa or tin medicine can as a base, or they may be purchased at nominal cost from Bio-Metal Associates, P.O. Box 346, Beverly Hills, Calif.

R.H.T. Mattoni, Richmond, Calif.

JEANE DANIEL GUNDER (1888-1948)

This year has marked the passing of Jeane D. Gunder, former member of the Lorquin Entomological Society of Los Angeles, and known to many for his enthusiastic work in diurnal Lepidoptera. His death occurred at his home, 310 Linda Vista Ave., Pasadena, California, on November 17, 1948.

Jeane D. Gunder was born in New York City in 1888 but had lived in Pasadena for over 25 years prior to his death. His active interest in butterflies was dropped in 1935 when economic conditions forced him to give up his collection and enter a new business. In 1937 he sold his collection, of about 28,000 specimens, to the American Museum of Natural History in New York. His fine library was acquired by Cyril F. dos Passos.

Gunder's keen interest in butterflies led him to describe 212 species, races, forms and aberrations, which were presented in the leading American entomological journals. Aberrations were his principal interest for many years and his last work on these controversial "transition forms", as he called them, was of real importance. His most outstanding work was "The Genus Euphydryas of Boreal America" in 1929 and "North American Institutions Featuring Lepidoptera", 1929-30. At least six butterflies and two moths were named in his honor by leading lepidopterists during his entomological career. He is survived by his widow, Mrs. Fannie Gunder.

Lloyd M. Martin

JOHN A. COMSTOCK RETIRES

The Los Angeles County Museum has announced the retirement, on October 1, 1948, of Dr. John Adams Comstock. Dr. Comstock is best known to lepidopterists for his beautifully illustrated book: Butterflies of California (see review in Lep. News 1: p.38) and for his numerous unexcelled papers on the life histories of Lepidoptera of southwestern U.S.A. Dr. Comstock was Chief Curator of Natural Science at the museum at the time of his retirement. He had been at the Los Angeles County Museum for 20 years. Prior to that he was Director of the Southwest Museum for 6 years. Dr. Comstock was responsible for the assembling in the L.A. County Museum the most complete collection of California butterflies in existence. As its president for 20 years, Dr. Comstock has been the center of guidance of the vigorous Lorquin Entomological Society. He has also been a leader of the Southern California Academy of Sciences and over 50 years ago was an officer of the Chicago Entomological Society. Although his time has largely been devoted to biological sciences, he received the M.D. in 1915 and has practiced medicine intermittently since then.

Now having retired from professional duties, "Doc" expects no decrease in his investigations and papers on Lepidoptera, and as always, these papers will be superbly illustrated by his own paintings and drawings. He has retired to his carefully planned research center and home at Del Mar.

C.L.R.

FIELD NOTES

NOTES ON SOME MICHIGAN BUTTERFLIES.- The following notes are based on collecting around the author's home at Willow Run Village, near Ypsilanti, Michigan, during the past season (1948).

A rather curious courtship procedure was remarked for Pieris rapae. The seated female with wings flattened against the leaf, fore wings nearly covering hind wings, had her abdomen turned up in a nearly vertical position, angled from its base. The male hovered and fluttered about her, frequently walking on her outstretched wings, though apparently without attempting to couple. Without warning or apparent reason he suddenly ceased his attentions and flew away. The female remained for a moment, raised her wings, lowered her abdomen, and she too left. A similar fashion of holding the abdomen was noted in a resting female of P. protodice at the approach of a male, but he immediately left, and no further courtship activity ensued. Though my ignorance of the pertinent literature is great, I can recall no published mention of such activity, and indeed extremely little attention to courtship behavior, a phase of study which certainly deserves more observation.

On the 8th of July a worn female specimen of Echinargus (= Hemiargus auct.) isola alce (Edw.) was netted on clover in a large field. This is the second record of a specimen of this species taken in Michigan (the other having been taken in the southwestern part of the state (see Moore, 1939, Occ. Papers Mus. Zool. Univ. Michigan, no.411: 18; Remington, 1942, Bull. Brooklyn Ent. Soc. 37: 6-8). No further specimens were seen.

Seven specimens were taken, and two more seen, of the rare albinic form pallida Tutt of Thymelicus lineola Ochs., out of a conservatively estimated several tens of thousands of the normal form. Pallida was never observed in the areas where lineola was most common, but rather seemed to appear only in areas of lesser abundance. If this is not mere coincidence, and if the form is genetic in nature, as seems most probable, then there would appear to be some sort of selection at work.

Harry K. Clench

It is with pride that we have learned of the results of requests for aid which have appeared with the News from time to time. Herr Rudolf Künnert wrote gratefully from Wurzen, GERMANY, that his plea for living eggs of American Lepidoptera resulted in three shipments of eggs. This fall we sent out with the News a number of copies of a request for living pupae of certain moths needed by Alfred G. Sussman, of Harvard University, for research in susceptibility of Saturniidae and their relatives to a fungus which attacks insects. The prompt and generous response of several members materially expanded the value of his studies and resulted in his warm appreciation. Similarly, a number of advertisers on the "Notices by Members" page have written us in surprise at the large response received.

399. Anonymous, "Entomology" in "Northern Research Reports". Arctic, vol.1: p.137. 1948. Brief summary of Hovanitz' 1948 eco-genetical results along the Alaska highway discussing specifically Colias hecla and C. philodice.

400. Blackie, J.E.H., "Suburban Lepidoptera." Entomologist, vol.81: pp.207-208. Sept.1948. Attributes Lepidoptera scarcity around area south of Manchester to abundance of birds and industrial contamination of atmosphere.

401. Blackie, J.E.H., "The history, status and prospects in England of Coenonympha tullia Müller." Entomologist, vol.81:pp.229-235. Oct.1948. Records of former and present distribution, by counties. Butterfly in danger of extirpation from Britain.(P.B.)

402. Brown, F. Martin, "Taxonomy and Distribution of the Genus Pierella (Lepidoptera)." Annals Carnegie Museum, vol.31: pp.49-87, 11 figs. 8 Dec. 1948. Characterizes this genus of Satyridae, gives keys to the 13 spp. Discusses and briefly redescribes most spp., with distribution shown on useful maps; figures male genitalia of all spp. Concludes with check-list of spp. and list of author's records from Ecuador. Describes as new races: P. hyalinus fusimaculata (Trinidad), P. stollei boliviana (E. Bolivia), P. albofaciata decepta (E. Bolivia); describes 3 new "forms" of doubtful significance. On the whole a clear account of an entire genus.

403. Burns, A.N., "New Geographical Races of Australian Butterflies, with a Description of the Female, Larva, and Pupa of Pseudalmenus chlorinda barringtonensis Whs." Mem. Nat. Museum Victoria (Australia), no.15: pp.86-102, pls.3-8. Oct. 1947. Describes as new: Xenica klugi mulesi (Wardang Is., S. Austr.), Heteronympha cordace wilsoni (Dartmoor, s.w. Victoria), Trapezites sciron eremicola (Little Desert, Vict.), Ogyris amaryllis hopensis (Mt. Hope, Vict.), Candalides heathi doddi (Barrington Tops, N.S.W.). Fine photos of new & related races. Early stages and adults of barringtonensis (Lycaenidae) carefully described and figured.

404. Burns, A.N., "New Records of Lepidoptera from Victoria, with Notes on Some Rare Species." Mem. Nat. Museum Victoria, no.15: pp.103-108. Oct. 1947. New records of 5 spp. butterflies; 3 rare s pp. also recorded.

405. Burns, A.N., "Insects Collected at Mud Islands, Port Phillip Bay. November 30, 1945." Mem. Nat. Museum Victoria, no.15: pp.143-145. Oct. 1947. 2 spp. Lepidoptera recorded.

406. Burns, A.N. & C. Oke, "Insects and Arachnids" in "A Preliminary Report on the Biology and Ecology of the Snowy River Area in Northeastern Victoria." Mem. Nat. Museum Victoria, no.15: pp.168-171. Oct. 1947. Records 3 spp. moths, one probably a new Oxycanus (Hepialidae).

407. Clark, Austin H., "A new subspecies of Glaucopsyche lygdamus (Lepidoptera, Lycaenidae)." Proc. Ent. Soc. Wash., vol.50: pp.176-178. Oct. 1948. Describes as new Glaucopsyche lygdamus boydi (Ice Mountain, Hampshire Co., W. Virginia). Type in U.S.N.M. Distinguishes boydi from G. l. lygdamus but not from G. l. nittanyensis F. Chermock and G. l. jacki Stallings & Turner as implied by Article 25 of the Code. Authors cannot be too careful to comply with each requirement of the Code! G. l. boydi is listed from localities in Pa., W.Va., N.C., and Ark. in mountainous country in association with Carolina vetch (Vicia caroliniana), and will probably prove to be a synonym of nittanyensis. (C.F. dP.)

408. De Lucca, C., "Notes on some moths observed at Malta." Ent.Monthly Mag.,vol.84: p.192. Aug. 1948. New records: Nodaria nodosalis, Nycteola falsalis, Eublemma velox, Sterrha bractilinea, Eupithecia semigraphata,Horisme exoletata,Cucullia verbasci.(P.B.)

409. Deshpande, V.G. & K.R. Karandikar, "Insect pests of fruits and fruit-trees in the Deccan." Journ. Univ. Bombay, vol.16 (n.s.) (Science No.23): pp.1-14 (Biol. Sciences). Mar. 1948. Lists, for each species: nature of damage, locality and appearance, food plants, description and life history (brief), and control methods. Lepidoptera mentioned, and their food plants: Parasa lepida (mango, castor, pomegranate, wood apple, plantain, etc.); Euproctis scintillans (mango, castor, onions, sannhemp); Ophideres fullonica, O. materna, O. ancilla (orange, musumb, somelo, mango); Papilio demolius (citrus, bel, bavachi); Phyllocnistis citrella (citrus, bel); Arbela tetraonis (citrus, guava, mango, jak, ber, etc.); Virachola isocratis (citrus, pomegranate); Nephantis serinopa (cocoanut, other palms). (P.B.)

410. de Worms, C.G.M., "Drepana harpagula, Esp. (sicula, Hübner). A Short Review of its Past History and Present Status." Entomologist, vol.81: pp.205-206. Sept. 1948.

411. Evans, Eric, "Moths at a Suburban Station Lights in 1947." Entomologist, vol.81:pp.187-190. Aug.1948.

412. Ferrar, M.L., "The butterflies of the Andamans and Nicobars." Journ. Bombay Nat. Hist. Soc., vol.47: pp.470-491, 5 pls. 1948. Notes on the islands as collecting grounds. Annotated list of 268 forms of Rhopalocera. Plates illustrate forms of Troides (Papil.), Tros (Papil.), Euploea (Danaidae). (P.B.)

413. Field, William D., "The correct name for the North American butterfly variously called Nymphidia, Calephelis or Lephelisca (Lepidoptera, Riodinidae)." Proc. Ent. Soc. Wash., vol.50: pp.207-213. Nov.1948. Title somewhat misleading in that the paper does not relate to correct name of a butterfly but to correct generic name for the group of butterflies now listed under Calephelis. Author contends that Nymphidia Bdv. & Lec. is a synonym of Nymphidium Fabr., Calephelis Grote & Robinson a synonym of Emesis Fabr.; and that Lephelisca Barnes & Lindsey, with generotype Erycina virginiensis, is the valid name of the genus. Parenthetically, it seems to the reviewer that Nymphidia was not proposed by Boisduval and LeConte as a new generic name. (C.F.dP.)

414. Ford, E.B. & W.H. Dowdeswell, "The Genetics of Habit in the Genus Colias." Entomologist, vol.81: pp.209-212. Sept. 1948. Summarizes Hovanitz' paper (see Lep. News 2: p.69) and adds data on C. croceus in England. Urges more genetical study of habits.

415. Freeman, H.A., "Notes on Some North American Skippers, with the Description of a New Species from Kansas (Lepidoptera: Hesperiidae)." Ent. News, vol.59: pp.203-206. Oct. 1948. Describes as new species Atrytonopsis turneri (Barber Co., Kans.), which seems likely to fall to subspecific rank or less; differs from A. deva "in its smaller size"! Sinks Hesperia horus and H. metea belfragei as synonyms of H. metea licinus. New U.S.A. records: Atrytone eulogius and Cobalus percosius.

416. Freeman, T.N., "The Correction of a Genotypic Citation for the Genus Choristoneura Led." Ent. News, vol.59: p.202. Oct. 1948. Correct generotype is Tortrix diversana Hbn.

417. Fukaya, M., "The fundamental study on the forecast of rice borer, Chilo simplex Butler (first report)." (In Jap.). Matsumushi, vol.2: pp.9-14. June 1947 (T.S.)

418. Fukaya, M., "A fundamental study on the forecast of rice borer, Chilo simplex Butler (fourth report)." Nogaku Kenkyu, vol.37: pp.1-3. Sept. 1948. (T.S.)

419. Goodson, A.L., "New Varieties of Argynnis cydippe L. and Lycaena phlaeas L." Entomologist, vol.81: pp. 177-178. Aug. 1948. Describes as new Lycaena phlaeas race hibernica (Ireland) and aberration of cydippe.

420. Grison, P., "Effet du groupement sur la croissance des chenilles du Bombyx Cul-brun (Euproctis phaeorrhoea Don., Lep. Liparidae)." (In French). Comptes Rendus Soc. Biol., vol.142: pp.610-612. May 1948. Caterpillars of the brown-tail moth showed much more rapid growth when raised in groups of ten than when isolated. This effect was least in last larval stages and greatest just before hibernation (hibernates as larva). The larvae are normally gregarious. (P.B.)

421. Grison, P. & V. Labeyrie, "Effet de l'humidité sur le tissage des nids chez le Bombyx Cul-brun (Euproctis phaeorrhoea Don.)." (In French). Comptes Rendus Soc. Biol., vol.142: pp.609-610. May 1948. Larvae raised in closed chamber with humidity 100% fail to build usual nest of silk. (P.B.)

422. Lord, F.A., "Australian moth is world's largest." Journ. Ent. & Zool., vol.40: pp.45-46. Sept. 1948. Short semi-popular article about Coscinocera hercules. Record specimen had 14 inch span. Description of life history. Food plants: "Pana, Satinwood and Bleeding Heart trees". (P.B.)

423. Lord, F.A., "World's Largest Moth". Nat. Hist., vol.57: pp.450-451, ill. Dec. 1948. Summarizes knowledge of Coscinocera hercules, with photo of adult from New Guinea. Mentions specimen 14 inches wing spread, from Queensland, Australia.

424. Morley, A.M., "Aplasta ononaria in 1947." Entomologist, vol.81: pp.179-180. Aug. 1948.

425. Oke, Charles G., "Description of a new Species of Casemoth (Lepidoptera, Psychidae)." Mem. Nat. Museum Victoria, no.15: pp.178-179, pl.15. Oct. 1947. Describes as new: Plutorectis caespitosae (Mt. Hotham, Victoria). Type and some structures figured.

426. Petersen, Björn, "The Heat Rigor Temperature of Swedish Mountain Lepidoptera." (In English). Entomologisk Tidskrift, vol.69: pp.135-141. 5 Aug. 1948. Mean heat rigor temp. of diurnals 48° C., of nocturnals 43°. Nocturnals from open habitats, esp. swamps, able to stand higher temp. than those from wooded habitats. Cold rigor temps. correlate positively with heat rigor temps. Table gives statistics on 13 spp. of butterflies and 18 of moths from Sweden.

427. Picard, J., "Notes sur les Hesperiidae Pyrginae des régions palearctiques. Tribes des Erynnidi, Carcharodidi et Pyrgidi." (In French). Bull. Soc. Ent. France, vol.52: pp.129-134. Oct. 1948. Describes briefly each palearctic genus in these tribes and lists the palearctic species. Describes as new genus PLATYGNATHA (type: Pyrgus? phlomidi). (P.B.)

428. Ribeiro, B.L., "Contribuçao para o conhecimento da bionomia de 'Rothschildia aurata' (Cramer, 1775) (Lepidoptera, Saturnidae)." (In Portuguese). Revista Brasiliero Biol., vol.8: pp.127-141, 4 figs. Apr. 1948. Covers following: host plants (Ricinus communis, Chorisia speciosa, Fagara chiloperoni, Anacardium occidentale, Morus alba, Spondia lutea); length of adult life; time of oviposition and number of ova; description of all stages and cocoon; duration of each developmental stage; sex ratio. Figs. of larva, cocoon, pupa, adult. Apparently excellent life history study. (P.B.)

429. Russell, Archibald G.B., "A Plusia New to Britain." Entomologist, vol.81: pp.201-202, pl.I: figs. 1-5. Sept. 1948. P. limbirena (of E. Africa and India) taken at light in England. Good photos of P. limbirena, P. furcifera, P. ogorana, P. aenescens.

430. Russell, A.G.B., "Some notable visitors to light at Swanage in 1947." Entomologist, vol.81: pp.225-227. Oct. 1948. Records of moths. (P.B.)

431. Sankey, J.H.P., "Observations on the biology of Hepialus lupulinus L. (Lep.)." Ent. Monthly Mag., vol.84: pp.175-177. Aug. 1948. Records of emergence, flight, oviposition, hatching, larval habits. Foodplant: Fragaria. No control methods seem possible. (P.B.)

432. Sevastopulo, D.G., "The early stages of Indian Lepidoptera. Part XIX." Journ. Bombay Nat. Hist. Soc., vol.47: pp.197-219. 1947. Complete stages of: Papilio helenus (Citrus spp. and other Rutaceae); Panaera metallica (Sphingidae) (various arums); Rhegastis aurifera (Sphingidae) (Virginia Creeper). Gives partial life histories of 5 Papilio, 3 Lymantriidae, 1 Lasiocampidae, 2 Drepanidae, 1 Saturniidae, 3 Sphingidae, 5 "Noctuidae", 3 Geometridae, 1 Pyralidae. (P.B.)

433. Sevastopulo, D.G., "The early stages of Indian Lepidoptera. Part XX." Journ. Bombay Nat. Hist. Soc., vol.47: pp.458-469. 1948. Complete stages of: Leucania irregularis (Noctuidae)(grasses); Comibaena cassidara (Geometridae)(Ziziphus jujuba, Lagerstroemia indica, Ixora sp.). Partial life histories of 4 Papilionidae, 3 Pieridae, 2 Hesperiidae, 1 Lymantriidae, 7 "Noctuidae", 1 Geometridae, 3 Pyralidae. (P.B.)

434. Smith, L.M. & F.M. Summers, "Propagation of the oriental fruit moth under central California conditions." Hilgardia, vol.18: pp.369-387. Sept. 1948. Study of the reproduction of Grapholitha molesta in the central valley country of California, including mating behavior, oviposition (general habits, effect of weather differences between stocks from different localities), and viability of eggs. Concluded that hot, dry weather of this county does not interfere with propagation of the species. Races from different localities differed in date of maximum oviposition, number and viability of eggs laid. (P.B.)

435. Takahashi, I., "Note on capture of Argynnis hyperbius Johan. in Akita Pref., N. Jap. (Nymphal.)." (In Japanese). Trans. Tohoku Ent. Soc., no.5: p.20. Feb. 1948. (T.S.)

436. Tanaka, T., "Note on Papilio helenus nicconicolens But. (Papilion.)." (In Japanese). Coll. and Breed., vol.10: p.230. Aug. 1948.

437. Teale, Edwin Way, "Butterfly botanist." Nat. History, vol.57: p.325, ill. Sept. 1948. On Speyeria cybele. 2 poor photos. (P.B.)

438. Tobias, J.M., "Sodium and potassium in insects; larvae, pupae and adults." Proc. Federation Amer. Socs. Experimental Biol., vol.7: pp.124-125. 1948. Abstract of a paper given at the societies' annual meeting. Reports Na and K amounts and ratios in the hemolymph of several insects, including: Bombyx mori larvae: Na 14mM, K 40mM, Na/K 0.35, practically no Na in B. mori pupae; not true of Platysamia cecropia or "Philosamia" walkeri. (P.B.)

439. Valle, A., "Preliminary data on the chromosome cycle of Lycaeides idas L." Experimentia, vol.4: pp.388-389. 15 Oct. 1948. Author is studying problem of lycaenid females with thin coat of blue scales on wings, making them appear like males. Preliminary studies in spermatogenesis seem to show differences in chromosome number and irregularities in mitosis and meiosis. Suggests that unbalanced chromosome sets produced in this way may upset sex-determining gene balance, causing the intersexes. (P.B.)

440. Verhey, C.J., "Faunistische aanteekeningen over Lepidoptera." (Faunistic notes on L., in Netherlands). (In Dutch). Entom. Berichten, vol.12: p.252. 1 July 1948 (A.D.)

441. Warren, B.C.S., "On the Race of Erebia epiphron indigenous in the British Isles." Entomologist, vol. 81: pp.181-186. Aug. 1948. Concludes that English race should be known as aetherius, with the Scotch race a quadrinomial - form memnon.

11. The Butterflies of the District of Columbia and Vicinity; by Austin H. Clark*

The deceptively succinct title of this work might well lead one not acquainted with it to presume incorrectly that it was simply a list of the species of butterflies observed in the territory surrounding the nation's capital, with at most a few annotations. In the decade and a half since its publication this book has become a classic, well-known and widely admired. As a regional list it was compiled with great attention to completeness, based on nearly a quarter of a century of the author's personal observations and collecting in the environs of Washington, on previously made collections, and on a thorough canvassing of the literature. Furthermore, a list of species of probable or possible occurrence is appended, the likelihood of their being found in the District indicated, and these doubtful species illustrated along with those of known occurrence.

"The District Butterflies", as it is often called, exceeds by far the scope of utility of a simple regional list. The District of Columbia, located as it is between the elbows of northern and southern faunal elements, receives many nudgings from both, and an account of its butterflies is simultaneously an enumeration of nearly the whole butterfly fauna east of the Mississippi. Its plates are perhaps the best photographs of eastern butterflies available to the student. These alone would make it an invaluable reference tool.

The present review is too limited in size adequately to describe the merits of Dr. Clark's treatise and may only highlight a few of the interesting features it contains. An introduction of 61 pages carefully and entertainingly covers such intriguing subjects as: Habitats, the Succession of Butterflies, Pressure of Population, Butterflies and Storms, Extirpation of one Butterfly by Another, Observations on Butterfly Migrations, Suggestions for Studying Butterflies. After the systematic account there follows a table of seasonal occurrences of District butterflies and a well-illustrated discussion of experiments on the unexplained effects of contact exposure of film to the wings of various species of butterflies. The systematic list itself is replete with observations on habits, life histories, variation in numbers, variation within the species and much other information. Keys for identification are included and, something rarely done but most important, as full data as known accompany each specimen illustrated.

It is difficult to criticise this work, as one cannot help feeling admiration for it. A legitimate complaint might be the general lack of references and bibliography.

Dr. Clark has given lepidopterists, particularly those of the eastern United States, a valuable study aid and a model of thoroughness and accurate presentation.

Harry K. Clench

*Pp.ix, 337; 64 plates. 1932. U.S. Nat. Museum Bull. 157.

17. Supplementary Notes on John Abbot

In reference to the John Abbot autobiography (Lep. News II: 28-30), Mrs. Elsa G. Allen of Cornell University kindly brought to our attention several articles in the ornithological periodical The Auk. The most recent was Mrs. Allen's "A Third Set of John Abbot Bird Drawings" (Auk 59: 563-571; 1942), in which she reports on two unpublished volumes in the British Museum.

The first set of Abbot's bird drawings, at the Boston Society of Natural History, was described by Dr. Walter Faxon (Auk 13: 204-215; 1896). Samuel N. Rhoads (Auk 35: 271-286;1918) reported another group in the Wymberley Jones de Renne Georgia Library (now part of the University of Georgia). Of special interest, however, in filling out for News readers the facts about Abbot was Anna Stowell Bassett's "Some Georgia Records of John Abbot, Naturalist" (Auk 55: 244-254; 1938). Mrs. Bassett made an intensive search into old state and county records in Georgia and found a number of enlightening facts about Abbot. She refutes the contention of previous authors that Abbot returned to England in 1810, and states that he remained in the U.S.A. at least until 1839 and probably for the rest of his life.

Records in Burke County revealed that a John Abbot married Penelope Warren, and that a son, John Abbot, Jr., was born in 1779. Abbot was apparently a soldier in the Revolutionary War for several years, although the dates of his enlistment and discharge are not known. He was given a tract of land in Washington County in 1784 as bounty for his military service, and may have sold this to furnish his home in Burke County. In spite of conclusions we drew from Abbot's obviously poor grammar, it may be true that his profession was in part teaching, since a legal paper in 1787 described Abbot as "Schoolmaster". Screven County, the place usually considered to have been Abbot's home for many years, was formed by uniting Burke and another county in 1793, and the town where he lived, Jacksonborough, has long since ceased to exist. In 1806 Abbot and his son are listed in Savannah tax-rolls. The last record of him was in 1839. The document was a simple will, leaving all his property to his friend William E. McElveen. Mrs. Bassett gives evidence that Abbot's burial place is probably in the family cemetery on the McElveen estate near Meldrim, Georgia.

We are indebted to Mrs. Allen for calling our attention to these important articles. It appears that, while these papers in The Auk yield new details concerning Abbot's later years, the autobiographical notes published for the first time in the News remain almost the only positive information on Abbot's early life known to exist.

J.E.R.

PLEASE NOTIFY THE NEWS EDITORS
OF CHANGES OF ADDRESS PROMPTLY

NOTICES BY MEMBERS

JAPANESE BUTTERFLIES OFFERED in exchange for American species. Esp. interested in Lycaenidae, Satyridae, Nymphalidae. S. Murayama, Shinjocho 744, Ibaraki-shi, Osaka-Fu, JAPAN.

WANTED FOR CASH: Speyeria diana and S. leto, female specimens with full data. J.A. Evey, Benson, Ill.

Offer FRENCH BUTTERFLIES and MOTHS in papers in exchange for exotic ones except Microlepidoptera. F. Gaillard, 5 Cité du Midi 5, Paris 18, FRANCE.

For sale: over 500 STRYMON from all over North America collected over 17 yrs., at 6¢ each. Also other groups, such as Catocala, skippers, and 100 mostly So. Fla. specimens at 8¢ each. D.F. Berry, Box 146, Orlando, Fla.

Wanted:Argynninae,Papilionidae,diurnal swamp-loving moths. Offer in exchange RARE HUNGARIAN LEPIDOPTERA of any group. Dr. L. Gozmány, Budapest XII, Györi ut 1. II. 14., HUNGARY.

PAPILIO ARISTODEMUS PONCEANA for sale and exchange. Also all other south Florida and Florida Keys Lepidoptera for exchange. Write: H.L. King, 4618 Abercorn St., Savannah, Ga.

DANISH LEPIDOPTERA offered in exchange for papered Rhopalocera, Sphingidae, Arctiidae. A.Andersen, Odensegade F,Ø,Copenhagen,DENMARK.

Wanted immediately: All species of the genus ANNAPHILA Grt. and forms of AXENUS ARVALIS Grt. Accurate ecological data desired. Offer in exchange Phalaenidae of S. Calif. & living pupae of Hemileuca nevadensis californica Wgt. C.I. Smith, 161 So. 16th St., Apt. 1-B, Richmond, California.

WANTED: Wasps(Hymenoptera: Vespoidea,Sphecoidea,Chrysidoidea), particularly Psammocharidae (Spider-Wasps) and Mutillidae(Velvet "Ants"), of the world. Will collect Lepidoptera or other insects in exchange. David G. Shappirio, 4811 17th St., N.W. Washington 11, D.C.

Wanted from collectors or museums: any material of PEREUTE, ARCHONIAS and LEODONTA (Pieridae), for determination and distributional data to be used in revisions. It will be returned promptly and handled carefully. Please write before sending shipment. F.M. Brown, 326 Burns Bldg., Colorado Springs, Colorado.

WANTED: for taxonomic study, any U.S. species of Hesperioid genus MEGATHYMUS. I have for exchange many species of North American Macrolepidoptera. Paul R. Ehrlich, 538 Academy St., Maplewood, New Jersey.

Named RHOPALOCERA & partially named HETEROCERA & MICROLEPIDOPTERA offered in exchange for Microlepidoptera of South Asia. Collections of such Microlepidoptera also solicited for identification. Dr. A. Diakonoff, Zoölogisch Museum, Buitenzorg, Java, D.E.I.

SPEYERIA DIANA and many other scarce Lepidoptera available for exchange for desired spp., esp. of Papilio, Megathymus, Sphingidae, etc. William F. Duhlmeier, 2535 Indian Mound Ave., Norwood 12, Ohio.

In exchange for Philotes of the world, MY ENTIRE COLLECTION of 5,000 specimens of western Lepidoptera. Will send list of check list nos. available. Let me know your localities. R.H. Mattoni, V-29 Terr. War Housing, Richmond, Cal.

ENTOMOLOGICAL EQUIPMENT FOR SALE. Quality material at quantity price. Write for catalog. Bio Metal Associates, P.O. Box 346, Beverly Hills, California.

BUTTERFLIES of the BELGIAN CONGO and BELGIUM offered in exchange for North American butterflies (except Hesperiidae). S.G. Kiriakoff, 14 Universiteitsstraat, Ghent, BELGIUM.

FOR SALE: common MEXICAN BUTTERFLIES in good condition. Supply limited,order early. Write: L.S. Phillips, Loyola University Medical School, 706 S. Wolcott Ave., Chicago, Ill.

WISH TO PURCHASE to fill out sets:

Proc. Ent. Soc. Philadelphia: vols.1-6
Proc. California Academy Sciences: vols.1-7
Bull. Buffalo Soc. Nat. Sciences: vols.1-5
Psyche: vols. 11, 13, 15 (pref. unbound)
Proc. Acad. Nat. Sci. Philadelphia: vols.1-20
Trans. Am. Ent. Soc.: vols.1-10
The Entomologist: vol.1

C.F. dos Passos, Washington Corners, Mendham, N.J.

Limited number of choice perfect Oeneis jutta reducta and Erebia magdalena for exchange for other Alpines and Arctics, esp. O. macouni, nevadensis, and ivallda.
A.G. Lauck, 2716 Grandview Ave., Alton, Ill.

LIVING MATERIAL

WISH TO BUY about six living MOLE CRICKETS (Gryllotalpa hexadactyla) from field entomologists. Urgently needed for research. William G. Nutting, Biological Labs., Harvard University, Cambridge 38, Mass.

LIVING COCOONS of Lepidoptera from India for sale as follows: Attacus atlas -50¢, A. cynthia -12¢, A. edwardsi -50¢, Antheraea mylitta -40¢, Leopa katinka -25¢, Caligula cachara - 25¢,each. Send with U.S.A. orders permit from U.S. Dept. of Agriculture. Himalayan Butterfly Co., Shillong, Khasi Hills, INDIA.

Living pupae of Eacles imperialis and Papilio troilus offered in exchange for other specimens, including papered Papilio, or for sale at 25¢ each. Mrs. Vonta P. Hynes, 152 Meachem Ave., Battle Creek, Mich.

FOR SALE: cocoons of Telea polyphemus, Callosamia promethea (10¢ ea.,$1 doz.), Automeris io (15¢ ea.,$1.60 doz.), Actias luna (25¢ ea., $2.50 doz.), Attacus cynthia (20¢ ea.), Anisota rubicunda (5¢ ea., 50¢ doz.), Ancana mylitta (50¢ ea.). Bombyx mori eggs (50¢/100). E.A. Ferguson,1213 Bellflower,S.W.,Canton,Ohio.

WANTED: Living pupae of any species of Colias, esp. eurytheme-philodice, in exchange or for purchase. Carl W. Gottschalk, Harvard Medical School, 25 Shattuck St., Boston 15, Mass.

QUESTIONS AND ANSWERS

Q. "What is the best method to recover caterpillars and pupae which were preserved in alcohol and accidentally allowed to dry up later?"

A. The best way I know is to warm in a detergent solution: I use Tergitol 7 0.1% with KOH not over 0.5% in water, put in the solution cold and slowly warm to steaming hot; then transfer to 50% and then 70% alcohol. The body will plump out but not usually retain color, and sometimes collapses again or even goes to pieces. I have used it only for larvae; keep the pupae dry if they have gone dry.

Q. "Who was the first to use the male genitalia for classification? I have heard that it was Scudder and Burgess, working on skippers."

A. I don't know. Scudder was far from the first. I have traced the terms tegmen (tegumen) and valve back to Hübner (Lepidopterologische Zuträge, p.26, 1820). The earliest systematic use I know of was by Lederer in the "Noctuinen Europas" (1857) with 30 sketches of valves, and directions (p.6) for breaking off the right valve. Earlier uses were, I think, all casual, such as Stephens' (1830) reference to the very large valves in describing Scotosia.

W.T.M. Forbes

N.J. KUSNEZOV

We recently learned of the passing in Russia, apparently in 1948, of N.J. Kusnezov, the outstanding Russian lepidopterist. Before news of his death reached us we were preparing the review (see p.104) of his important "Revision of the Amber Lepidoptera", and were hoping to establish contact with him. We shall attempt to gather material for a biographic sketch to appear in a later issue of the News.

Peter F. Bellinger, of Yale University, is rendering valuable and much appreciated aid in the task of preparing the News by examining a large number of current scientific journals and abstracting all papers on Lepidoptera. Abstracts in the "Recent Literature on Lepidoptera" section when not initialed are by the News editor. Initials in parentheses following abstracts refer as follows:

(P.B.) = Peter F. Bellinger
(A.D.) = A. Diakonoff
(C.F.dP.) = C.F. dos Passos
(T.S.) = Takashi Shirôzu

There is considerable demand for volume I of the News, and our supply of several numbers is exhausted. Members who have no need for their copies of the first volume will be doing a service in returning them to the editorial office. First, persons or institutions needing that volume to complete their reference file will be cared for. Second, the small income ($1.50) which accrues to the Society from each sale will be returned to the members in a better News.

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WINANS, WILLIAM W., 505 Loma Vista Drive, Beverly Hills, Calif. LEPID: esp. MACRO. Coll. Ex. Buy. Sell.

THE LEPIDOPTERISTS' NEWS is the monthly periodical of The Lepidopterists' Society. Membership is open to anyone interested in the study of butterflies & moths. The 1949 dues, including subscription to the NEWS, are $2.00 for Regular Members and $4.00 or more for Sustaining Members. Please make remittances payable to : Charles L. Remington.

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ERRATA FOR VOLUME II

p.15, lines 44-45: "sympatric" should be "allopatric".

p.28, title: "10" should be "11".

p.52, left col., lines 1, 10, 41; p.53, left col., lines 10, 19: "palmyra" should be "palmira".

p.55, left col., line 2: "8" should be "9".

p.56, left col., line 40: "ruwen zorica" should be "ruwenzorica".

p.58, left col., line 7: "matsumarai" should be "matsumurai".

p.78, right col., line 43: "Entomologishes" should be "Entomologisches".

p.95, left col., line 2: "9" should be "10.

MAILING DATES FOR VOLUME II

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No.3-	6 Apr. 1948	No.8-	27 Dec. 1948
No.4-	7 June 1948	No.9-	(see Vol.III, no.1)
No.5-	30 June 1948		

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The Lepidopterists' News

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c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.

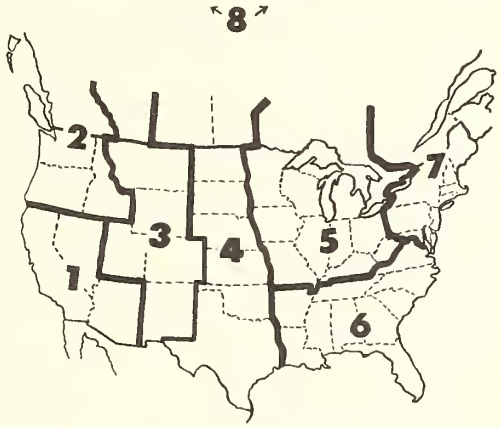
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

Volume II Supplement

THE FIELD SEASON SUMMARY OF NORTH AMERICAN LEPIDOPTERA FOR 1948

The field observations of North American Lepidoptera for the 1948 season were somewhat improved over last year, when this project was initiated. However, they are disappointing in view of the large number of careful observers who failed to participate and in view of the complete lack of information on many regions and the scarcity of records of moth occurrence, migration, and parasitization. The poor California response was particularly disappointing. The excellent Northeast participation was most encouraging. Undoubtedly the small number of contributions was due in part to the serious postal delay in delivering the issue of the Lep. News which called for the individual reports. In order to circumvent such a calamity in the future, the 1949 Season Summary will be announced in the spring and the reports will be requested well in advance of the due date.

The broad pattern of Lepidoptera occurrence in North America indicated an average year, with considerable differences between Areas.



SEASON SUMMARY ZONES

In the Southwest the season was exceptionally bad, following the very dry winter. As in 1947, spring species were earlier than usual. Most of the season was dry, but Arizona had late summer rainfall and Lepidoptera abundance.

In the Northwest it was not nearly as good a year as 1947. The very heavy rainfall in late spring was climaxed by heavy floods and in general the spring species were much delayed. Melanic specimens appeared in unusual numbers. Most moths suffered a poor year. In Idaho Nymphalis californica larvae nearly constituted a plague and the population pressure there may result in heavy northwestward emigrations in a year or two.

The Rocky Mountain region returned to near normalcy in flight dates and abundance after the late poor season of 1947. After early summer conditions were dry. There was little information on moths.

In the Great Plains the reports almost exactly duplicated those for 1947. The "heathi" type of aberrations of Strymon were exceptionally frequent. Catocala had a rather good year. In the Canadian Great Plains a very early frost was followed by extended warmth with moths in noteworthy abundance.

After the boom year of 1947 in the Central Area, the Lepidoptera conditions were average. The season was a bit early and moisture average, except in late summer, when it was dry. The only reports of Danaus plexippus mass migrations came from this Area.

The Southeast apparently had an average year. The spring species were late, as in 1947. July and August were dry, but later conditions were warm and moist and the Lepidoptera season continued unusually late in the fall. There was little comparative information on moths. Phoebis sennae was observed in mass migration.

In the Northeast, the general picture showed a poor, late spring, excellent summer season, and dry, late fall. Moths had a poor year, except in Nova Scotia. Butterflies were abundant, especially the three Oeneis in New Hampshire and Maine. Polygonia interrogationis larvae were very numerous in New Hampshire. Lycaenidae had an excellent year, contrasting with the poor 1947 season. In Connecticut, parasitization was high in the fall.

For the Far North we were again fortunate in having reports. The prospects for continued representation of the Far North in the Season Summary look good as a result of the establishment of the Northern Insect Survey under Dr. Freeman.

Mention of reduction of Lepidoptera from DDT spraying came from Washington and the Carolinas.

In this year's summary much information was accepted which would be excluded or published in other issues of the Lep. News in future years. Valuable field notes are those on Colias eye colors (p. vi), host plants (p. viii), and so on. An effort was made to use uniform names for species and genera. In most cases the nomenclature of the McDunnough Check List has been used, but a few more up-to-date names have been used. Most subspecific names have been omitted because the races are geographic in all American cases known to us. Authorities' names have been omitted since they are not necessary for this sort of project.

C.L.R.

1. SOUTHWEST- CALIFORNIA, ARIZONA, NEVADA

by Lloyd M. Martin
Los Angeles, California

The reports on Lepidoptera in the Southwest were not as favorable as in past years. Due to less than one-half of the usual rainfall, this section of the country has experienced the poorest collecting in 20 years. Many collectors were in the field from time to time and as a rule were disappointed in finding most species of butterflies were about a month ahead of their regular flight period and were very scarce. Moths were not as abundant though some very good species were taken.

CALIFORNIA

Thorne and Creelman report from the San Diego region the spring emergence was early. Several species continued through the year to appear ahead of schedule (Speyeria), but others were normal (Mitoura spinetorum, Lycaena hermes); at least there appeared to be a tendency for the season to swing back to normal as the summer went along. The desert slopes of the Laguna Mts. burned off with serious effects on a couple of good collecting spots. About 18,000 acres of brush and forest land burned last year and about one percent of the country's brush land goes up in smoke each year. As the human population of this area increases, the native species of Lepidoptera decrease and introduced species increase numerically. Euphydryas chalcedona had an abortive second brood in mid-July, Pieris beckerii appeared in coastal valleys in November, a couple of strong new colonies of Lycaena hermes were found, Megathymus stephensi was more plentiful, but all other desert Rhopalocera were very poor. No other rarities were seen or reported.

In the Ridge Route area, about 80 miles north of Los Angeles, the collecting was poor in comparison to past seasons, due to the lack of rain. Four trips were made between the 5th and 26th of June. Speyeria macaria seemed to be out in fair numbers, Speyeria hennei, Colias harfordi, Strymon californica, Minois silvestris, Tharsalea arota, Lycaena heteronea clara and Habrodais grunus were taken but were not nearly as common as in a "normal" year.

The last week of July to August 2nd were spent in the High Sierras of Inyo and Mono Counties of California by Wm. T. Meyer and F.W. Friday. The season was retarded from eight to ten days due to the lack of snow and moisture compared to past years. Melitaea malcolmi was just about at the end of its flight in the Barney Lake region. Between this Lake and Lake Mary, a distance of five miles, Lycaena cupreus and Oeneis ivallda were just starting to emerge whereas Euphydryas nubigena was very common. At Barney Lake, el.10,200 ft., Colias behrii, Plebeius podarce, and Polites sabuleti were very abundant, Parnassius clodius was just coming out. No Papilio indra were seen in this locality, where they were collected in previous years. Near Lake Mary, Speyeria malcolmi and the day-flying moth Platyprepia guttata form ochracea were taken flying on the hill slopes. At The Minarets, el.9,300 ft., there was a little snow on the ground and the Euphydryas nubigena and Lycaena cupreus were flying in good numbers, as was Plebeius icarioides. Plebeius shasta and a few Philotes battoides were taken at the ridge and near-by meadows. At Mono Lake region Speyeria nokomis were just coming out. The hybrids of Limenitis lorquini and weidemeyerii were taken in small numbers. Also flying were Lycaena rubidus, Tharsalea virginensis and Platyprepia guttata form ochracea. Near Bridgeport Minois boopis and paulus were in full flight. In the June Lake district, el.8,500 ft., collecting was too early, a few Phyciodes campestris and Minois oetus were taken.

Sperry reported from the Upper Santa Ana River, el. 6,300 ft., that the extreme dryness resulted in "the poorest collecting in 20 years" there.

ARIZONA

At Yuma, collecting was very poor during most of the year. There were a few things out early in January as a result of the late fall rains of 1947. The only other time that there were Lepidoptera enough to make collecting worthwhile was late in October for a few weeks after the good soaking rain about the middle of the month.

Weather data:
Total precipitation for year 1.83 (½ the normal).
Total precipitation Jan.1 to Oct.1 - 0.50 inches.
Total precipitation Oct.1 to Dec.31 - 1.33 inches.

These weather factors will help explain the above statement in regard to collecting. As far as could be found out, Hemileuca juno did not fly this year.

At Prescott, collecting during June was about average with some species above average in numbers. In Oak Creek Canyon, collecting was rather poor during June; the season for most species was later than usual. At the San Francisco Peaks, collecting was about the same as in former years, some species flying a little earlier than in preceding years. Conditions in general were dry. In the White Mts., collecting in August was fairly good as far as species collected, but the late summer months were very rainy and limited collecting considerably. In the Chiricahua Mts., the August collecting was good; some species were very abundant, but the weather was very rainy - about 15 inches in two weeks. In the Santa Rita Mts., collecting was poor because of rain, but very good in the foothills and on the desert around the mountains. In the Santa Catalina Mts., collecting in August and September was poor in general; conditions were too dry, as in 1947. Moths however were abundant in and around Sabino Canyon. Around Tucson, Libytheana bachmanii was exceedingly abundant.

It is unfortunate with all the moths collectors we have here in the west that NO direct reports came in of their activities.

No reports were received from northern California or from Nevada.

Contributors: D.L. Bauer; J.L. Creelman; F.W. Friday; W.T. Meyer; D.E. Parker; J.L. Sperry; F.T. Thorne.

by John C. Hopfinger
Brewster, Washington

A phrase appearing repeatedly in the individual reports received from collectors in Area 2 is a "late, wet spring". This was in contrast to 1947, when the season was somewhat early in most localities. The wet spring was climaxed in early June by the terrible floods of the Columbia River and its tributaries and the heavy rains and widespread flood damage surely had severe effects for the Lepidoptera which live in lower localities. The lateness of the flight periods continued at least into August.

Baker reported from the Blue Mts. district of OREGON that the late spring was followed by excellent collecting in late June, especially for Lycaenidae, Euphydryas, Erebia epipsodea, Papilio, and Pieris napi. Papilio indra and Mitoura spinetorum appeared to be somewhat less abundant than usual.

Manning, in IDAHO, found that the "collecting season was slowed up as much as two weeks even in August" and that cold rains and storms resulted in irregular appearance of Lepidoptera and unusually cold conditions. The cold affected the Catocala and Sphingidae and both had a poor year. The late season in early August was shown by Speyeria atlantis and S. egleis, of which only males were found on the date when both sexes are usually common. For the third consecutive year Nymphalis californica was extremely abundant, the caterpillars defoliating the mountain lilac in some localities.

In southeastern WASHINGTON, Cook found in his normally dry region continuous wet conditions, with "two measurable rains" in August. The dry-loving species were adversely affected. Phalaenidae which were more abundant than usual in light trap studies were: Graphiphora c-nigrum; Ceramica picta; Leucania minorata; Septis spp.; Amphipyra tragopoginis; Autographa simplex and A. californica; Hypena humuli;and especially Platyperigea extima. Phalaenidae which were distinctly less abundant than usual were: all Euxoa; all Agrotis; Peridroma saucia; all Scotogramma; all Polia; and especially Schinia sexplagiata. Cook did considerable interesting rearing, on which he promises notes in the Lep. News soon.

Here in north-central Washington we found the early collecting about on time and normal. Euchloe creusa was common, but E. ausonides scarce. All other Pieridae were in fair numbers. Incisalia iroides were common. Glaucopsyche columbia was scarce. During the first 3 weeks of May, we had heavy showers and cold, windy days, but by May 25th Melitaea sterope was very common. In early June Minois oetus and M. paulus, Plebeius acmon and P. montis, Philotes oregonensis were normally common and Phaedrotes piasus was surprisingly numerous. Oeneis nevadensis, which here shows in numbers every second year, was fairly numerous again. Lycaena heteronea was very abundant, as were L. helloides and Minois baroni a little later. In early September, in the mountains (el. 7500') south of Wenatchee, butterflies were in very good numbers; I noted especially Speyeria mormonia, S. hydaspe, and S. zerene; Pieris occidentalis; Colias philodice; and Satyrium fuliginosa. This was the poorest Papilio year I have ever seen here. A fine little colony of Pachysphinx modesta around my place seems to have been wiped out by DDT spraying of nearby orchards. Strymon titus and S. saepium were fairly numerous; they had not been seen for several years. The number of melanic abberrations this year was noteworthy. I found melanic Plebeius acmon, Callipsyche behrii, Lycaena nivalis, and Melitaea sterope.

In northwestern Washington, Frechin found the spring wet and late and the wetness continuing all summer. Exceptionally common species were: Euphydryas editha; Coenonympha tullia; Incisalia polios; and Callophrys viridis. For the third straight season Nymphalis antiopa was not seen; and N. californica was rare, after the good year in 1947. Less common than usual were: Pieris napi; Colias occidentalis; Glaucopsyche columbia; Speyeria cybele; and S. hydaspe. A notable capture was Catocala elda. Mrs. Henricksen took Oeneis gigas on Mt. Constitution.

Guppy made detailed observations on southern Vancouver Island, BRITISH COLUMBIA. The hibernating nymphalids were not in evidence this year; a single Nymphalis antiopa and one N. californica were found in March and April. N. milberti and the Polygonia spp. finally left dormancy in early May. Thereafter the flight periods were about normal. Incisalia iroides and Lycaena helloides appeared for the first time since 1945 and were common. Lycaenopsis pseudargiolus and Limenitis lorquini were abundant as is invariably true. For the second successive year Papilio eurymedon and especially P. rutulus were unusually numerous. Fresh Speyeria zerene and S. hydaspe were found continuously from early July through August. Minois alope is continuing its steady increase in abundance. Strymon melinus, usually scarce, was common in July and August. Neophasia menapia was reappearing, about a dozen having been seen. In 1945 "vast swarms" appeared through August, September, and early October; in 1946 it was uncommon; in 1947 none were seen. Among Sphingidae Hemaris diffinis had a poor year, but 3 specimens of the rare Proserpinus flavofasciata were taken, and Smerinthus cerisyi was present frequently; no Celerio have been seen since 1945. 1948 was an exceptionally good year for Arctiidae. Diacrisia virginica, Isia isabella, Halisidota maculata, and Arctia caja were unusually numerous. Hyphantria textor was less common than last year, when it was very common. Early Phalaenidae, such as Xylomyges hiemalis, X. rubrica, Xylena nupera, X. cineritia, X. curvimacula (?), and Orthosia hibisci were all abundant. Later Autographa californica and several species of Zale were common. The usual light trap pests, Graphiphora smithi, Nephelodes emmedonia, and Lycanades purpurea, were surprisingly scarce.

Contributors: J.H. Baker; W.C. Cook; D.P. Frechin; R. Guppy; J.H. Manning; H.E. Rice.

3. ROCKY MOUNTAINS - NEW MEXICO, UTAH, TO ALBERTA

by J. Donald Eff
Boulder, Colorado

Flight periods were apparently normal again this year, being for the most part earlier than last year's retarded season. While the 1947 season ranged from slightly below what we might call normal to very poor, this season in contrast varied from excellent in the vicinity of Boulder, Colorado, to very poor in sections of Wyoming and Montana. In some cases areas not many miles distant from each other had greatly differing collecting conditions. One lamentable fact is the absence in our Area of resident collectors. While information supplied by such collectors as A.G. Lauck, on his trip through the Rocky Mt. region, is of great assistance, it necessarily cannot impart the complete picture that only a resident collector thoroughly familiar with his area and the fauna can give. Thus, the only State covered with any degree of completeness this year is Colorado, although we are indebted to others for the information on the rest of Area 3.

No report from ALBERTA was received this year.

In MONTANA, the only area reported is Glacier National Park, visited during the second week in July. It was too dry and windy for good collecting.

For WYOMING, the outlook was quite spotty. It seems that certain mountain areas had sufficient rainfall to ensure good collecting while others suffered for lack of the needed moisture. Thus, I understand that Yellowstone National Park provided good collecting during July especially, while just to the south, in the Tetons, conditions were very poor owing to the unusual dryness. Oeneis jutta, normally fairly common, appeared to be absent from the Tetons. The Big Horn Mts. provided very good collecting; but in the area south of the Tetons around Daniel, Glasgow reported conditions poor with hot, dry winds prevailing the entire summer.

From UTAH we had no report at all, either from the two resident collectors or the one that I know who collected through that State on a trip to and from Nevada. This we regret.

COLORADO is favored with reports from the northwestern corner of the State, and then thru the central part of the State from Boulder to the New Mexico border. The general picture for this State seems to be a rather dry season, especially in the north and south, with the central part developing the same conditions a little later in the summer.

Most species of Papilio seemed to occur in about their usual numbers, except that P.S. Remington and I noted more specimens on the wing of what we surmised to be P. bairdii, although we failed to capture any. Dr. Wiest claims that a few years ago they were fairly common but that recently he hasn't seen any. Perhaps this marks the beginning of the upswing of their cycle. More abundant than last year seem to have been the following: Oeneis chryxus; O. uhleri; Anthocharis sara; Pieris sisymbrii; Incisalia mossii; Callophrys sheridani; Philotes enoptes; Euphydryas eurytion; Phyciodes nycteis; Neophasia menapia; Speyeria eurynome; Nymphalis milberti; Apodemia nais; Strymon titus; Mitoura siva; and Ochlodes snowi. C.D. Schryver and F.M. Brown reported Incisalia polios more abundant than usual.

Entirely missing this year seemed to be Nathalis iole, Strymon melinus atrofasciata, and Euptoieta claudia. The general lack of specimens may be connected with the dryness of the summer. An excellent concept of the dryness of the season, particularly from the middle of July on, was shown in a chart made by Dr. Hugo Rodeck, of the Museum of the University of Colorado, during an expedition to the Dinosaur National Park in northwestern Colorado. Most of the temperatures for days of that month read in the higher 90's, with a relative humidity as low as 5%. I have had the privilege of examining the specimens collected there and note with interest the number of Pieris beckerii taken. It apparently does not occur east of the Continental Divide.

Others appearing to be less plentiful than usual were: Oeneis lucilla; Strymon saepium; Lycaena xanthoides; L. heteronea; and L. rubidus. Lycaena snowi and Phaedrotes piasus were scarce, as usual. Most of the other things, such as Erebia epipsodea, E. magdalena, E. ethela, Boloria aphirape, B. myrina, Pieris napi, Limenitis wiedemeyerii, Euchloe ausonides, Colias scudderii, Papilio ajax, Coenonympha ochracea, Euphydryas capella, Minois alope, M. oetus, Plebeius melissa, P. icarioides, and Glaucopsyche lygdamus, occurred in about the usual numbers. Most species of Speyeria were a little more abundant than usual.

Items of particular interest include: F.M. Brown's report of his first specimens of Strymon melinus franki seen at Fountain Valley School and his report of Eumenis ridingsii for the first time on the plains; Rev. Rotger's capture of Minois meadii and Speyeria atlantis; and D.B. Stallings' cap tures of Megathymus streckeri and M. texana in southwestern Colorado and northeastern New Mexico. Hereabouts it was the capture of Eurema nicippe by P.S. Remington and my capture of Hemiargus isola coupled, of course, with our memorable trip to Rabbit Ears Pass for Speyeria secreta and sinope. (See Lep. News, vol.2: pp.91-92). I also captured a specimen of S. sinope in a swamp at about 10,000 ft. elevation between Brainerd and Mitchell Lakes in Boulder County.

What little information is available from NEW MEXICO seems to indicate that the season there was retarded somewhat, evidently by a late cold spell, although the season directly to the north, in Colorado, was normal. Rev. Rotger took 2 specimens of Pieris beckerii at Shiprock, New Mexico.

Not much information on moths is available, which is regrettable. Too few western collectors, with the wide range of Rhopalocera present, trouble themselves with the moths. The author is one of the guilty parties. However, Rev. Rotger does report the unusual abundance of Leptarctia californiae and the fact that the Catocala species were common this year.

Contributors: F.M. Brown; C. Glasgow; A.G. Lauck; P.S. Remington; B. Rotger; C.D. Schryver; D.B. Stallings.

4. GREAT PLAINS- TEXAS AND EASTERN PLAINS OF ROCKY MTS. STATES TO SASKATCHEWAN AND MANITOBA

by Don B. Stallings
Caldwell, Kansas

NORTH

For the second successive season spring came late on the Great Plains. In the Canadian area the season was 5 to 6 weeks later than normal. The very heavy snow did not begin to disappear until the last week of April. Then the sudden hot weather precipitated the collecting directly from winter to summer. The usual spring butterflies appeared in normal numbers, but were on the wing only days instead of weeks. Hibernating and early Phalaenids were either absent or extremely scarce. Late in the season conditions became normal with most of the common butterflies present; Papilio glaucus and Limenitis arthemis were especially abundant and persistent. Among the moths Sphingids were about normal, Notodontids very abundant, but both Phalaenids and Geometrids scarce. Not a single Telea polyphemus was seen, nor a Sthenopis. At Harlan, Saskatchewan, a few Erebia disa were seen but no Oeneis macounii nor jutta. Phalaenids and Geometrids were rare, but Notodontids and Arctiids were flying in more than usual abundance. For the first time a long series of Parasemia parthenos were taken. Heavy flooding of the river flats probably was the cause of the complete absence of Minois alope, Strymon titus and S. liparops along the Battle River, Saskatchewan. Among the Speyeria there only pseudocarpenteri appeared in normal numbers.

The northern season closed with a killing frost in early September followed by warm weather, which lasted,with one interruption of severe night frosts near the end of September, until the beginning of November. Surprisingly, light trapping became ideal and on Sept. 10th about 150 specimens were taken at light, including Catocala relicta, Notodontids such as Cerura and Ichthyura, Sphingids (cerisyi, geminatus, modesta), Deuteronomos magnarius(usually rare), other Geometrids including some that were spring forms, and a few other Phalaenids; Xylena curvimacula was unusually numerous. Catocala briseis and C. unijuga (normally common) were scarce; C. hermia and blandula were absent. The last butterfly was a late Coenonympha inornata on October 3rd.

Highlights of the Saskatchewan season were: a female Poecilopsis rachelae, a Vanessa virginiensis, and the discovery of a colony of Platysamia columbia nokomis larvae, a species which had not been taken there during the last twenty years.

MIDDLE

In the Kansas-Oklahoma area the season commenced wet and about 10 days late. The Incisalia were far below normal. Again Euchloe olympia was late and below normal. In the panhandle region of Oklahoma Megathymus yuccae were in full flight on April 25th, 15 days late. Normally 25 or 30 species would have been in flight in the area at that time, but the only others observed were a few E. olympia and Mitoura siva. In southern Kansas Glaucopsyche lygdamus did not occur until April 18th, a good 10 days late. Early Amblyscirtes were absent.

While it was cold and wet through March and most of April the season advanced rapidly in May, which was very dry. By the last of May the season could be considered normal. By May 23rd Strymon ontario and falacer were in full flight in the Wichita Mts. of southern Oklahoma (normal time) and for the second time we found a number of specimens of both species with the white lines on the under surfaces expanding to form a single band in typical "heathi" fashion. Catocala were abundant on this date in the Wichita Mts. and often 30 to 50 specimens were fighting to get to a single smear of bait; the commonest species were ilia, coccinata, ultronia, micronympha and amica.

June was ushered in with floods and the rains continued until the middle of July. Strymon alcestis, which normally appears around the 1st of June, was on time but extremely rare, only 5 or 6 specimens being observed where normally there would be 500. In southern Kansas there was a fine flight of Hesperia during the first half of June including the species viridis, uncas, attalus and ottoe. On June 15th worn specimens of Megathymus texana were observed in the panhandle of Oklahoma, which would indicate a normal flight beginning about the 1st of June. The fall was dry with collecting poor, very few fall forms.

SOUTH

The season in Texas was slightly below normal as the past year had been unusually dry. The spring c o ld spell for the Great Plains extended into the Rio Grande Valley area. Anthocharis midea was taken at Pleasanton, Texas, on March 3rd. Pupae and larvae of Megathymus yuccae taken at San Antonio,Texas, on this date and brought back to Kansas did not emerge until after the middle of April, though kept in a warm room. Normally this species would be in flight in southern Texas from the end of February through March.

In the Rio Grande Valley the following species were abundant: Atlides halesus; Strymon clytie; Hemiargus cyna; H. gyas; Asterocampa clyton. The following species were about average: Ascia josephina; Danaus eresimus; Myscelia ethusa; Apodemia walkeri; Strymon azia; Incisalia henrici; Astraptes fulgerator; Cogia calchas; Amblyscirtes bellus; Cabares potrillo; and Asterocampa leilia. The following species were scarce: Papilio ornythion; P. polydamus; P. anchisiades; Anteos clorinde; A. maerula; Strymon pastor; Thecla bazochii; Mitoura xami; Lerodea tyrtaeus; L. edata; Lasaia sessilis; Cogia outis; Pellicia costimacula. New records were: Proteides mercurius and Cobalus percosius.

The coverage in Area 4 is still poor, this summary being based on the observations of three groups of collectors with no report to cover the Dakotas or Nebraska. Collectors from other areas who stop in the Great Plains even a few days should write reports.

Contributors: P.F. Bruggemann; H.A. Freeman; J.R. Turner.

5. CENTRAL - MISSOURI TO WEST VIRGINIA, NORTH TO ONTARIO

by P.S. Remington, Jr.
St. Louis, Missouri

The coverage of the Central Area in 1948 is by no means as complete as it should have been, considering the number of lepidopterists who operate in this area. Reports from more collectors will be eagerly welcomed after the 1949 season. Several collectors have kept a sort of "Lepidoptera diary" of their observations and finds throughout the season. This makes the season's report an accurate and easy task and is recommended to all collectors.

In MISSOURI the collecting season got off to a normal start and stayed that way most of the year, although the last part of it was quite dry. Early visits to favorite spots in St. Louis County yielded, besides the common species,the rarer Incisalia henrici, Euchloe olympia, Anthocharis midea, Mitoura damon. One noteworthy observation was of a fresh specimen, apparently recently emerged, of Danaus plexippus on May 18. This may indicate that some individuals do pass the winter in Missouri in the chrysalis. It has been thought that plexippus does not winter here, that the adults migrate south in the fall and that a later brood comes north in early summer to repopulate the area.

At Alton, ILLINOIS, Lauck found about the same collecting as reported above near St. Louis. In late April he took Anthocharis midea, Feniseca tarquinius, Everes comyntas, Lycaenopsis pseudargiolus, Incisalia henrici, Amblyscirtes hegon, Thorybes bathyllus, Erynnis brizo, E. persius, and E. icelus. A great rarity for this area was taken on April 25 at Marquette State Park, Grafton, a single specimen of Strymon m-album. On June 20 Lauck reports the first Danaus plexippus, as well as Speyeria cybele, Minois alope, Phyciodes tharos, and other commoner species. In late August he found collecting excellent. The season near Alton was about two weeks early at the start, but by the last of May everything seemed again on schedule. An early freeze on Oct. 17 killed off some of the fall butterflies, but late hatchings made up for it.

In northern Illinois Bristol reports collecting on blackberry (Rubus) a larva of Strymon liparops which later hatched out. He noted that Rhodophora gaurae has been common for several years, but in 1948, R. florida was the common one. He was also very successful in collecting and rearing larvae in Oklahoma in April and May of the following species: Strymon edwardsi, S. autolycus (both on oak); S. alcestis (on china berry); Catocala micronympha, C. coccinata, and C. ilia (all on oak); C. somnus (on cottonwood); C. abbreviatella (lead plant). The larvae of Catocala ilia collected in Oklahoma were heavily parasitized. Kricogonia lyside was common on lilac flowers. Noteworthy INDIANA captures were: Sibine stimulea; Parasa chloris; and Apatelodes angelica.

Woodcock reports finding Anthocharis midea, Neodezia albovittata and Haematopis grataria,at Turkey Run Park, near Marshall, Indiana, on May 5. In August he ran into a host of Speyeria atlantis and S. cybele at Big Springs, Michigan.

In WISCONSIN, Griewisch found the season around Green Bay about ten days advanced over 1947. On May 30 he caught many Hemaris diffinis and H. thysbe, an early record for these clearwing moths. A careful search of Marinette County for Oeneis chryxus strigulosa was unsuccessful. On June 11 he took a good series of skippers in Brown County, including Erynnis brizo, E. juvenalis (both are found two months earlier in Missouri), Poanes hobomok, Carterocephalus palaemon, Polites peckius and P. mystic. At this time Limenitis arthemis and Papilio glaucus were just emerging. June 20 in Marinette County he took more skippers, including Hesperia sassacus, Amblyscirtes hegon, and others. "Caught several males of Colias interior with both black and green eyes, the green eyes turning black after specimens were prepared for a while." July was so hot and dry very few specimens were taken, either in Wisconsin or on a trip through South Dakota, Wyoming, Colorado, and Nebraska.

Arnhold at Chippewa Falls, Wisconsin, reports that the winter of 1947-1948 was so severe that many trees were killed by prolonged temperatures as low as -42 F. This was followed by a summer unusually hot and dry, and it was not a good collecting year. His observation indicates that Danaus plexippus does not survive the winter there, but that worn females make their appearance in June and start the summer brood, which then definitely migrates in the fall. In 1948 the migrations began around the first of September and were going strongly from the third to twelfth. "They seemed to be flying rather close to the ground, stopping to feed freely." On the ninth he "noticed some as high as 300' to 400' drifting in a southerly direction between S.E. and S. They all seemed to be going in that general direction. At night they would stop in bushes and lower branches of trees. The only rush was on the 9th", when there were local showers.

Sieker, collecting near Madison, Wisconsin, found the collecting better than for some years, although he too found the latter part of the season very dry. Papilio ajax was extremely common; P. glaucus almost as common, Pieridae about as common as usual, although P. rapae was noticeably more scarce, P. napi more common in the north. Lethe portlandia and Megisto euryta were the commonest he has ever seen them, but Lethe eurydice was quite rare. Minois alope was not as common as formerly. Speyeria were more abundant than the year before, indicating that the early feeders were not affected by the drouth late in the previous season. The Polygonia were all quite rare, and Nymphalis antiopa was rare where it used to be common. Limenitis arthemis was more common than in many years. Strymon were really quite rare "but somewhat better than the 1947 season", which was disastrous. Lycaena thoe and L. dione were common; no L. helloides appeared this year. Sieker is a close observer of moths and found the early species of Sphingidae, Amphion nessus and Sphecodina abbottii, more common than usual; most of the other Sphingidae were quite rare, even Celerio lineata. The 4 common local Saturniidae were abundant.

This year he found only one Anisota rubicunda, usually common. Arctiidae were not as common as in previous years, but this was a better than average noctuid season. Catocala started off slowly but were abundant in July. However, only one C. cara was found all season. He took one C. coccinata and one C. neogama, both rare there. Geometrids were scarcer than usual.

In MICHIGAN Mrs. Hynes was successful in finding and rearing larvae of common Saturniidae, several Arctiidae, Eacles imperialis, Cicinnus melsheimeri, Papilio troilus, and others. One of her P. troilus larvae produced the well-known aberration sometimes called "radiatus", a noteworthy discovery. Unfotunately, she can not yet give comparative data on net collecting. Richard reports the successful rearing of Libytheana bachmanii from the egg, the first record of the species in Wayne County, Michigan. A female was observed laying the eggs on hackberry (Celtis). All stages of the life cycle were observed and perfect imagoes obtained. Asterocampa clyton and C. celtis were also noted to be very plentiful on the hackberry.

From Payne, OHIO, Price reports that the season varied from normal to rather dry, late in the year, the usual observation in Area 5 in 1948. A single specimen of Speyeria idalia was taken, the first from this area. At Mud Lake in the extreme northwest corner of the state, the following skippers were much more plentiful than in 1947: Poanes massasoit; Atrytone conspicua; A. dion; A. bimacula. Speyeria aphrodite (near race alcestis) were more plentiful also, but typical aphrodite was rare, just the reverse of last year. Lycaena dorcas was also taken at Mud Lake, a new record for the state. An oddity was the capture on November 23 of a fine Colias eurytheme, the latest record known there.

Our only correspondent from KENTUCKY is Cook from Crailhope. He writes that 1948 was one of the best seasons in many years, with the exception of late fall, which was very dry and cool. Papilio glaucus had a peak year, ajax and philenor normally common, with ajax having a remarkable abundance in early September. Papilio marcellus continued to be very scarce. Only a few torn Papilio cresphontes were seen. Early April ajax, glaucus, and philenor were dwarfed. Anthocharis midea made a weak comeback after being entirely absent in 1947. No Euchloe olympia were seen. Colias were very scarce, as was Danaus. Notable captures were two Strymon m-album and one Atlides halesus. Anaea andria had a good year. Mitoura damon was very scarce in spring, but appeared in great abundance in mid-July. Strymon cecrops had a peak year. Agraulis vanillae was seen in small numbers in early fall.

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Contributors: F.R. Arnhold; M.L. Bristol; C. Cook; L.W. Griewisch; Mrs. V.P. Hynes; A.G. Lauck; H.F. Price; R.E. Richard; W.E. Sieker; H.E. Woodcock.

Addenda: A.L. McElhose reported a migration of Danaus plexippus at Arlington Heights, Illinois. On September 20, at 3:00 p.m. there were "thousands of them on the wing", and the heavy flight had been passing for 3 hours then. At 5:00 p.m. he wrote: "Still a few stragglers moving. Cloudy all day."

6. SOUTHEAST - FLORIDA TO LOUISIANA, NORTH TO ARKANSAS AND VIRGINIA

by Ralph L. Chermock
University, Alabama

An extremely cold winter, climaxed by unusually cold weather in January, apparently retarded the emergence of many species. Also, this variation in temperature might have played some role in the scarcity of many species normally abundant. The hurricanes in Florida were of insufficient severity to affect the insect populations. A prolonged dry spell in the Gulf States during July and August seemed to decrease the normal flights, and many species were either rare or absent. A warm autumn throughout the region, coupled with normal precipitation, extended the flight periods well into December.

J.G. Franclemont, one of the leading students of moths, who has been collecting in VIRGINIA during the last year, has sent in a remarkable list of species. It may be summarized by families as follows: Noctuidae - 224 species; Notodontidae - 13 spp.; Arctiidae - 16 spp.; Geometridae - 84 spp.; Eucleidae - 16 spp.; Zygaenidae - 1 sp.; Megalopygidae - 2 spp.; Lacosomidae - 1 sp.; and Lasiocampidae - 1 sp. He also observes that a large number of species of moths, such as Dercetis pygmaea, have more northerly ranges than had been previously expected. In future years he will be able to draw comparisons between seasons. Of great value is the list of foodplants based on his extensive rearing, given at the end of this summary.

Information on the GREAT SMOKY MTS. is sparse. However, H.L. King observed that the continuous DDT spraying during the 1948 poliomyelitis epidemic "Played havoc with Lepidoptera." Martha Sellers noted that the females of Speyeria diana, which are usually on wing in late summer, were becoming rare.

M. Eugene Smith, collecting around Newnan, GEORGIA, at the southern end of the Appalachians, made the following observations on relative abundance in comparison to previous years. He observed that the following species occurred in normal frequency: Phyciodes tharos; Vanessa virginiensis; Strymon melinus; Incisalia niphon; I. irus; Amblyscirtes vialis; Achalarus lycidas; Catia otho; Hylephila phylaeus; Problema byssus; Erynnis terentius; and Thorybes pylades. The following species were more abundant than normally: Atrytonopsis hianna; Hesperia metea; Thorybes bathyllus; and Erynnis martialis. The majority of the species found in the area, however, were considerably rarer than usual. These were: Papilio philenor; Eurema lisa; E. nicippe; E. jucunda; Phoebis eubule; Pieris protodice; P. rapae; Minois alope; Euptychia gemma; E. cymela; E. sosybius; Phyciodes ismeria(?); Euptoieta claudia; Agraulis vanillae; Polygonia interrogationis; Junonia coenia; Limenitis archippus; Libytheana bachmanii; Strymon cecrops; Erynnis icelus; E. brizo; E. horatius; Pholisora hayhursti; Lerema accius; Lerodea eufala; Proteides clarus; Calpodes ethlius; Copaeodes minima; and Atrytone logan.

Along the coastal region extending from SOUTH CAROLINA TO GEORGIA the flights were "Normal to off." H.L. King particularly noted the absence of Limenitis astyanax and all species of Colias. H.W. Eustis

noted that Megathymus yuccae was not collected in areas where it previously had been found. He also observed that the increased human population had reduced the number of butterflies in his area.

In central and northern FLORIDA, the flights were normal; but Strymon favonius, Brephidium pseudofea, and Anartia jatrophae were absent. Minois pegala and Mitoura damon were scarce. The species of Asterocampa were abundant, along with Euptychia gemma and cymela.

In southern FLORIDA and the Keys, H.L. King noted that the flights were subnormal. There was a noticeable scarcity of Strymon favonius, Eurema nise, Strymon acis, Eunica tatila,and Papilio aristodemus ponceana. No Eumaeus atala were observed.

A.B. Klots compared collecting during July of 1947 and 1948, and makes some interesting observations on butterflies of southern Florida. In Royal Palm Park, the fauna was normal, with Phyciodes phaon being somewhat more abundant. Collecting at Brickell Hammock was normal, with an increased abundance of Appias drusilla. An additional record of Asbolis capucinus verified Mrs. Grimshawe's record of this species in 1947. Dr. Klots seemed to feel that this introduction is probably definitely established in this region. His observations on the Keys are as follows: "On Key Largo, things were evidently much drier than normal. Even the shaded interiors of the hammocks were bone dry, and dead leaves powder dry. The roadside flowering plants were much affected; and collecting was definitely poorer for many species. Some of this may have been cyclic, however, and not due to drought. Eurema nise nelphe, which was taken in good numbers in 1947,was totally absent. I also failed signally to get Kricogonia lyside and Eurema daira palmira, although I collected the right spots to the inch on the right days. Polygonus lividus savigny may have been actually more common. A considerable swarm of Brephidium pseudofea was found on Plantation Key, the most I have ever seen at one time."

In ALABAMA, most species were late in emerging because of a snow fall in January, followed by a prolonged cold spell. Consequently, early spring forms such as Erynnis brizo and Papilio marcellus were late in emerging, although their numbers were apparently unaffected. A prolonged dry spell during the summer decreased the flights, although many species occurred in normal abundance somewhat later. A migration of large numbers of Phoebis eubule,flying in a southerly direction, was observed in the first two weeks of September. This migration was also noted throughout northern Alabama and Tennessee. The large migration of Danaus plexippus observed in the latter part of September, 1947, was not duplicated in 1948, although a few individuals were seen passing through around September 15th. Lethe eurydice appalachia was found in numbers in Moody Swamp near Tuscaloosa, an extension of the known range of this subspecies.

A population study was made in the Tuscaloosa area based on 1,628 specimens of butterflies collected on 13 days throughout August and early September. The following relative frequency by families was noted.

FAMILY	NO. OF SPECIMENS	PERCENTAGE
Papilionidae	3	0.2
Pieridae	138	8.5
Danaidae	1	0.1
Satyridae	11	0.7
Nymphalidae	400	24.6
Lycaenidae	139	8.5
Hesperiidae	936	57.5

Of a total of 42 species collected, the most abundant, in order, were: Atalopedes campestris; Hylephila phylaeus; Euptoieta claudia; Pyrgus communis; Everes comyntas; Agraulis vanillae; Phyciodes tharos; and Eurema lisa, with the others being scarce.

In MISSISSIPPI, Bryant Mather observed no significant changes in the flights of 1947 and 1948. However, he also noted that the cold spell in January retarded the emergence of most species. Collecting in LOUISIANA was good, but no comparison could be made with previous years.

No reports were available on Tennessee, Arkansas, nor comparative data on Heterocera.

Contributors: H.W. Eustis, J.G. Franclemont; H.L. King; A.B.Klots; B.Mather; Martha Sellers; M.E.Smith.

VIRGINIA HOST PLANTS RECORDED BY J.G. FRANCLEMONT

Phosphila miselioides - reared on Smilax rotundifolia (Catbrier).
Prodenia dolichos - reared on Ricinus communis (Castor Bean).
Pyrrhia umbra - larvae collected on terminal leaves of Rhus typhina (Sumac).
Xanthoptera nigrofimbria - reared on Syntherisma sp. (Crab Grass).
Acontia aprica - reared on Althaea rosea (Hollyhock).
Euparthenos nubilis - reared on Robinia pseudoacacia (Black Locust).
Mocis texana - reared on Syntherisma sp.
Mocis latipes - reared on Syntherisma sp.
Celiptera frustulum - reared on R. pseudoacacia.
Hypsoropha hormos - reared on Diospyros virginiana (Persimmon).
Phiprosopus callitrichoides - reared on Smilax rotundifolia.
Agrotis annexa - reared on Taraxacum officinale (Dandelion).
Anicla infecta - reared on Zea mays (Corn).
Orthodes crenulata - reared on Tar. officinale.
Dasylophia anguina - reared on R. pseudoacacia.
Heterocampa biundata - reared on Carya sp. (Hickory).
Anacamptodes defectaria - reared on Prunus serotina (Wild Cherry).

by Eugene Munroe
Macdonald College, Quebec

Representative reports are available for the Atlantic coastal region; but for inland regions, owing partly to the inactivity this year of several usually productive collectors, reports have been scanty. The general picture has been one of a cool and unfavorable spring, followed by more normal conditions in July and August, with a late and dry autumn. In western New York and Quebec, at least, snowfalls were abnormally light, and very cold winter weather resulted in unusually deep freezing of the ground; Kimball reports frost to the exceptional depths of four and five feet from the vicinity of Rochester, N.Y. Snowfalls were heavier in the regions north of the St. Lawrence Valley, but still abnormally light by local standards. Lepidoptera appear to have been generally depressed in numbers except in the extreme south and extreme north of Area 7. An exception may be noted in Nova Scotia, where Heterocera were unusually abundant at light, although Rhopalocera were depressed as elsewhere. Detailed summaries by localities follow.

MONTGOMERY CO., MD., April 23 to May 1. Everes comyntas, Phyciodes tharos, Colias eurytheme, C. philodice, and Pieris rapae were abundant. Papilio glaucus, P. philenor, Polygonia interrogationis, Proteides clarus, and Erynnis horatius were frequent. Papilio glaucus (dark female), P. marcellus, P. ajax, Lycaena hypophleas, Pholisora catullus, and Erynnis persius were rare.

MONTGOMERY CO., PA., July 1-5. Everes comyntas, Speyeria cybele, Euptychia eurytus, Papilio glaucus, Colias eurytheme, C. philodice, Pieris rapae, and Proteides clarus were abundant, especially the last. Papilio philenor, P. ajax, P. glaucus (dark female), Vanessa atalanta, and Erynnis spp. were frequent. Polygonia interrogationis, Euptoieta claudia, Eurema lisa, Strymon falacer, S. titus, S. melinus, Pholisora catullus, and Poanes spp. also were taken.

ORANGE MTS., N.J., May to September. The season was late, but extremely good in summer and autumn. Colonies of Eurema lisa and Papilio cresphontes were found and appear to be well established. Rhopalocera recorded (dates not available): Danaus plexippus, Phyciodes tharos, Vanessa atalanta, Limenitis archippus, Lethe eurydice, Everes comyntas, Lycaenopsis pseudargiolus, Eurema lisa, Colias eurytheme, C. philodice, Pieris rapae, Papilio glaucus, P. troilus, Pholisora catullus, Proteides clarus, Poanes zabulon, P. hobomok, and Ancyloxypha numitor were common. Polygonia interrogationis, Limenitis astyanax, Strymon melinus, Papilio ajax, P. glaucus (dark female), and P. cresphontes were scarce.

OAKLAND, N.J., Kimball took 25 specimens of Protoleucania rubripennis at light.

CATTARAUGUS VALLEY, WESTERN N.Y. Catocala were present at the usual time. C. parta, unijuga, meskei, concumbens, cara, and amatrix were in normal numbers, but relicta, neogama, and paleogama were not seen, although normally not rare. C. cerogama (formerly abundant) was very scarce, as in the past two or three years. Geometridae were about as usual in late summer. Plagodis phlogosaria reappeared in small numbers for the first time since its sudden disappearance in 1946. The late summer generation of Campaea perlata appeared at the normal time (last week of August), but in unusual abundance. In the late fall, Erannis tiliaria and Alsophila pometaria were unusually scarce, but Oporophtera bruceata was normally common.

ROCHESTER, N.Y. Butterflies were very scarce up to July 1; there were more after that date, but numbers were still limited. Response of Heterocera to both bait and light traps was probably poorer in both species and specimens than in 1947. Comparative figures for five experimental chemical baits were:

Year	Specimens	Species
1947	351	88
1948	115	53

Data are from Kimball. The season ended about Oct. 15th, as compared with Nov. 10th in 1947.

NEW HAVEN, CONN. Observations were from September to the end of the season. The unusually late occurrence (October) was noted for fresh individuals of several spp., such as Boloria toddi, B. myrina, and Lycaena thoe. A lone larva of Danaus plexippus on Asclepias syriaca did not finish feeding and pupate until early November, the adult appearing several days later, long after migrating individuals had all departed; relatively few Monarchs were seen this fall. Very abundant were Lycaena hypophleas, Phyciodes tharos, Everes comyntas; a few Eurema lisa were found. A small population sample of Colias on October 31 (17 males, 8 females) showed: 1 white female; 17 "pure" philodice; 5 "pure" eurytheme; and 2 hybrids; C. philodice seemed to compose the sedentary endemic population, the few C. eurytheme flying rapidly, stopping briefly, and moving on. The scarcity of the dominant Mendelian white female was surprising throughout the fall. Limenitis archippus females were commonly found ovipositing on Salix in October; at least 80% of ova collected produced tiny parasites (Trichogrammatidae?). Parasites were numerous in larval populations of Pieris rapae, especially one of the Larvaevoridae and less often, an Apanteles wasp. A much delayed larva of Proteides clarus finally produced a number of parasitic larvae which soon yielded Braconid wasps. The many larvae of Papilio troilus taken on Lindera benzoin and Sassafras officinale produced no parasites. When the leaves had fallen, Callosamia promethea cocoons proved to be abundant in nearly every clump of Sassafras and wild cherry (Prunus). One yielded 6 Larvaevorid parasite grubs.

FALL RIVER, MASS. Erynnis and other early butterflies were scarce in the cold, wet weather up to the end of May. In July, August, and September, collecting was excellent. Some Theclinae appeared in unusually large numbers: Strymon liparops, edwardsii, and falacer were in about five times normal numbers at selected collecting areas on milkweed blossoms.

NEW HAMPSHIRE. Numbers of Lepidoptera were below normal,but increased over the past two or three years. Speyeria cybele and atlantis were somewhat below normal, but aphrodite was common, as were Boloria toddi and myrina. Euphydryas phaeton was seen (June 28), for the first time in several years; Melitaea harrisii was scarce. Polygonia interrogationis, an irregular visitor to this region,was present in great numbers, and the larvae were a pest on hops; other Polygonia were very scarce. Nymphalis milberti and Vanessa atalanta appeared in large and increasing numbers as the season progressed, but N. antiopa was below normal and j-album very scarce. Colias philodice was common in the spring, but later generations were below normal numbers; C. eurytheme was scarce. Pieris napi was very scarce, even in favorable localities. Papilio glaucus was in small, but increasing, numbers; P. ajax was above normal, especially in the second generation. Colias interior was not seen; Limenitis archippus was common, arthemis scarce; Minois alope was very abundant; Lethe eurydice was scarce;Carterocephalus palaemon was common. In the Heterocera, hibernating Phalaenids appeared early (late March), with Eupsilia devia common, but others, especially Lithophane, far below normal. Geometridae were fairly common; Catocala were extremely scarce, only single specimens of cerogama, ultronia, antinympha and briseis were taken, all in late August. In the montane fauna, Oeneis semidea and Anarta melanopa were very abundant on Mts. Washington and Jefferson in the 2nd week of July. Oporinia autumnata and Nepytia semiclusaria were found in numbers numb with cold on the floor of the Great Gulf, Mt. Washington, Sept. 15. Unusually late records were: Minois alope, female, Oct. 17; Lycaena hypophlaeas, male,Oct. 17; Colias philodice,white female, Nov. 9.

MAINE. After an early opening, with snow gone early in April, the weather became cold and wet, continuing so into early July in the south and into mid-July in the north of the State. Many spring butter flies were not seen, while others were in small numbers. Papilio ajax, Pieris rapae, and Poanes hobomok appeared quite late (first rapae on April 16). Erynnis icelus was in good condition at Augusta and Bar Harbor June 2-4, at Strong June 19, and on top of Mt. Katahdin July 19. Temperatures rose to normal in July, but August and September were dry in south and central Maine. Phyciodes tharos appeared in possibly 20% of normal numbers; Colias eurytheme, Vanessa cardui and virginiensis, Limenitis arthemis, Nymphalis j-album and antiopa, Incisalia spp., and Strymon spp., were all excessively rare. Incisalia lanoraieensis was, however, reasonably common in late May at Dead Stream Bog, north of Lincoln. Colias philodice, Minois alope, Speyeria, Boloria, Lycaena hypophlaeas, and the skippers were in less than normal numbers. Papilio ajax, Danaus plexippus, and Feniseca tarquinius were normal and Pieris rapae very abundant. Oeneis katahdin was in at least normal numbers; O.jutta appeared June 1-10 at Passadumkeag; June 20-30 at Klondike Bog, 2500 ft., northern side of Mt.Katahdin. Eurema lisa, Lycaena thoe, and Ancyloxypha numitor were taken in the Augusta area for the first time,and Erynnis juvenalis was taken east of Bucksport. Most Heterocera were reduced in numbers, even in mid-summer. Micros and forest-dwellers were particularly depressed. Sphingidae, especially Phlegethontius quinquemaculatus,were numerous. Apantesis quenselii was unusually common on Mt. Katahdin, but most other arctic forms were depressed. Schinia marginata was taken in numbers, a new record for Augusta. Apamea interoceanica and Papaipema were unusually common. Catocala and Autographa were scarce. Coryphista meadi was taken in numbers at Augusta. Most micros were scarce, but Crambus, Galasa nigrinodis, Pyrausta nubilalis, Synanthedon acerni, and Schiffermuelleria argenticinctella were unusually common. Crambus abnaki was common everywhere, and C. browerellus on Mt. Katahdin. Synanthedon fulvipes was taken near Augusta, and a series of Hyaloscotes sheppardi was secured.

NOVA SCOTIA. Diurnals were scarce, as for the past few years. Incisalia were scarce. I. polios appeared May 13 in southern Nova Scotia; augustus was rare; and henrici and niphon were not seen. I. augustus, Lycaenopsis pseudargiolus, Colias philodice were present June 20 in Cape Breton; this part of the Province always has an abnormally late spring, owing to the persistence of ice in Northumberland Strait. Oeneis jutta was scarce, due to bad weather at normal times of emergence (June 13-19 in southern N.S.). Plebeius scudderii, Lycaena epixanthe, and Colias interior were common in bogs in July; Limenitis arthemis showed some increase over last year. Euphydryas phaeton was found at Londonderry on July 18, somewhat past its prime. Colias eurytheme was very scarce; Polygonia and Speyeria were in low numbers. Papilio brevicauda was absent, as for several years past, at Baddeck (type loc. of bretonensis), but larvae of Glaucopsyche lygdamus were abundant on Lathyrus in early August. Heterocera were abundant at light, but not at bait, except for some hibernated Cuculliinae beginning April 13. Even Catocala did not come to sugar, although they appeared at light. By the end of August, light collecting had become poor. Interesting captures were: Sympistis sp., Xylomyges dolosa, Parahypenodes quadralis, Gluphisia avimacula, and colonies of Spartiniphaga panatela, Xanthorrhoe abrasaria, Semiothisa oweni, and Apaecasia atropunctata. At least 14 new records of Macroheterocera were obtained by Ferguson and Hall. Coleophora kalmiella was reared at Armdale; Sthenopis argenteomaculatus was not taken, but a specimen of S. purpurascens (?) was secured in Cumberland Co., July 19. Interesting Pyralids included Crambus lyonsellus at Baddeck, Aug. 8; Phlyctaenia acutella, a long series at Goodwood and other localities in early July; P. extricalis, end of June and early July; Hymenia fascialis at Armdale in September; Herculia thymetusalis at Baddeck in early August. Warm weather continued very late: Alsophila pometaria and Oporophthera bruceata were still flying in early December, and a straggler of pometaria was taken flying in the woods (at Armdale?) Jan. 1, 1949!

QUEBEC. In the Montreal region most Lepidoptera were in small numbers up to late June. Minois alope was unusually abundant in July, and Lethe eurydice was common. Boloria myrina was seen in exceptional numbers in late August. Junonia coenia was taken at Chartierville (?) on Aug. 25. A numerous colony of Ancyloxypha numitor was noted at Baie

d'Urfe in late August. Most groups of moths were well below even the low numbers of 1947. Prof.Gray had good collecting at a low-lying riverside locality, however. Interesting species were: Plusiodonta compressipalpis (June 27-July 12); Habrosyne rectangulata (June 27 and Aug. 21); Amphipyra glabella (Aug. 15); Nonagria sp.(Aug. 23); all in reasonable numbers. Abundant species were: Cisseps fulvicollis (June); Herculia intermedialis; Nymphula obscuralis, Archips rosaceana, (all July); Hyppa xylinoides; Plusia contexta, Graphiphora smithi; Agrotis ypsilon; Physosteganía pustularia;Hydriomena fluctuata; Nymphula icciusalis(all Aug.); Graphiphora c-nigrum, Feltia venerabilis; Lycophotia saucia; Parastichtis bicolorago;Leucania unipuncta;Autographa brassicae; Lithophane laticinerea;Xanthia flavago;Ennomos magnaria (all Sept.); and Erannis tiliaria (Oct.). Ceramica picta and Pero honestarius, among others, were unusually scarce. At Lanoraie, at the beginning of June, the season was far behind normal, and Lepidoptera were scarce;a fresh Incisalia lanoraieensis was the only specimen seen of the four Incisalia normally found there, and would have been about two weeks behind normal emergence. Oeneis jutta, which would have been expected at that time, was not seen, nor was Crambus labradoriensis. At Shawinigan, in early June, Glaucopsyche lygdamus was very abundant, Coenonympha inornata common; Crambus of the leachellus group were numerous, C. browerellus much less so. In the Laurentide Park, butterflies were numerous, although slightly less so than in 1947. Glaucopsyche lygdamus, Erynnis spp., Papilio glaucus, Amblyscirtes vialis, Carterocephalus palaemon, were all common at the end of June. A single Oeneis jutta was taken. Erebia discoidalis was not seen. Worn Incisalia were present in some numbers. In August, Polygonia were present in normal numbers, gracilis being the most common species at the end of that month. Colias eurytheme (which are scarce even in the Montreal region) was not seen, but philodice was common. At Cacouna, on the south shore of the lower St. Lawrence, July 4-15, Glaucopsyche lygdamus was very common, Plebeius saepiolus less so. These two species were taken on the same day (see Lep. News, vol.1: p.89). Other species taken were: Speyeria cybele and atlantis; Boloria myrina; Hemaris diffinis;Eupithecia cretaceata (taken around Veratrum); Xanthorhoe iduata; X. abrasaria, larvae of Papaipema harrisi, in Heracleum, and a larva of Catocala semirelicta on a fence. Sheppard took 12 specimens of "what McDunnough calls possibly Eupithecia grata Tayl."at Montreal on June 26.

Contributors: A.E. Brower;P.R. Ehrlich; D.C. Ferguson; P.H.H. Gray;L.P. Grey; C.P. Kimball; D.J. Lennox; C.L. & J.E. Remington;W.P. Rogers; L.R.Rupert; A.C. Sheppard.

by T.N. Freeman
Ottawa, Ontario

One of the greatest difficulties in reporting lepidopterous collecting conditions in remote northern localities is the fact that a collector is rarely in any locality for more than one summer. The following season that collector may be a thousand miles from his former collecting spot and comparative seasonal summaries are therefore difficult to prepare.

During the summer of 1948 collecting parties were established by the Northern Insect Survey* at Goose Bay, Labrador; Knob Lake (54° 47' North, 60° 48' West) and Fort Chimo, Quebec; Frobisher Bay, Baffin Island; Coral Harbour, Southampton Island; Sawmill Bay, Great Bear Lake; Reindeer Depot, Mackenzie Delta; and along the Alaska Highway from Dawson Creek, British Columbia, to Snag, Yukon. These collecting sites are scattered across 3000 miles of Arctic and Sub-Arctic terrain. The material collected by the Survey last summer has not yet been specifically identified. Therefore, the following notes are fragmentary and represent only an outline of the general lepidopterous abundance. A detailed report of the species taken at each locality will be subsequently prepared.

GOOSE BAY, LABRADOR

The season at Goose Bay was extremely wet and cold and collecting was consequently poor. The relatively small collection obtained from this base shows that the fauna is definitely connected with the Canadian coniferous zone and contains a few southern elements. The early blue butterfly Lycaenopsis pseudargiolus was on the wing in hundreds early in June. A great number of species had emerged

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*Editor's note: This organization is a joint project sponsored by the Canadian Defence Research Board, Department of National Defence, and by the Division of Entomology, Department of Agriculture. It is under the administration of the Unit of Systematic Entomology and coordinated and supervised by Dr. Thomas N. Freeman.

Dr. Freeman states that the objectives of the Survey are:-

1. To study the biology and systematics of the biting fly groups.

2. To make general insect collections in order to increase our knowledge of the biology and distribution of the Canadian Arctic insects.

The survey teams are stationed at various Arctic and Sub-Arctic localities from Labrador to the Yukon. This survey has produced what is probably the largest collection of Arctic American insects ever to be assembled. Data are being accumulated to show the distribution of species as well as their geographic variation. The habitats of several butterflies have been ascertained and the knowledge of this relatively little known fauna is being greatly increased.

by the middle of that month but the country is so laborious to traverse on foot that collecting was extremely difficult. One would expect, however, that the usual lepidopterous genera indigenous to the northern coniferous forest were present.

KNOB LAKE, QUEBEC

The following summary was prepared from notes submitted by Dr. E.G. Munroe who was stationed at Knob Lake. This area is essentially Labradorian. The 1948 season presented fair to good collecting conditions. As is typical of northern latitudes, the butterflies require careful and prolonged stalking. They are rarely attracted to flowers and collecting in series is therefore difficult. Wet ground and mud puddles were quite productive, and many moths were attracted to light after the middle of July, when the nights became reasonably warm. Ten species of Rhopalocera were obtained, in the genera Pyrgus, Hesperia, Colias, Plebeius, Oeneis, and Boloria. Representatives of the following groups of moths were collected: Gelechiidae; Coleophoridae; Tortricoidea; Pyralidae; Geometridae; and Phalaenidae. The last family was the best represented, with Pachnobia, Euxoa, and related genera predominating.

Dr. Munroe also visited Seven Islands, Quebec, and reports that this fauna is essentially Canadian.

FORT CHIMO, QUEBEC

Fort Chimo is situated on the fringe of the northern coniferous tree limit and is essentially transitional in nature. Components of both the true Arctic fauna and that of the Hudsonian intermingle in this region. The weather was good for general collecting but the lepidopterous fauna of the area was rather scanty during the 1948 season. Butterflies were not common and a great deal of time was necessary in order to obtain even a small series of any one species. Representatives of the usual northern genera (Boloria, Erebia, Colias, and Oeneis) were obtained. The moths were represented by a few phalaenids, geometrids, pyralids, tortricids, and arctiids. The phalaenids were the most abundant but the habit of flushing with startling rapidity made it almost impossible to capture a very large number.

FROBISHER BAY, BAFFIN ISLAND

The unusually warm weather which prevailed over most of the true Arctic region during last summer facilitated insect collecting over that large area. I believe this was of great advantage to the terrestrial insect fauna and it should certainly increase the numbers which will be present next year. The butterfly fauna of Frobisher Bay was extremely abundant in individuals of the usual Arctic Species. It was quite common to observe 40 or 50 butterflies at any time, and this condition was reminiscent of the 1947 season at Churchill, Manitoba, when Dr. Carl Gottschalk and I saw hundreds of butterflies in the Carex meadows of that region. At Frobisher Bay the genera Boloria, Erebia, Oeneis, Colias, and Plebeius were common. Moths were fairly abundant in the area and were represented by the families Phalaenidae, Geometridae, Liparidae, Pterophoridae, Tortricidae, Epiplemidae and Pyralidae. The phalaenids were the best represented and the most difficult to capture because of the habit previously mentioned. Byrdia rossi was the only liparid which was obtained.

CORAL HARBOUR, SOUTHAMPTON ISLAND

This locality is apparently quite rich in Lepidoptera as judged from past expeditions undertaken in this area. The collection from Coral Harbour was largely comprised of Colias nastes and hecla. Phalaenids form the bulk of the moths which were obtained. This locality is well within the barrens and the fauna is similar to that of the Baker Lake district.

SAWMILL BAY, GREAT BEAR LAKE

This area is within the Hudsonian zone on the east shore of Great Bear Lake and is a region where the Canadian granitic shield dips under the Paleozoic sediments to the west. The insect fauna appears to change and such genera as Euchloe appear along with other more widely distributed Hudsonian genera. D.F. Hardwick collected at this locality from June 11th to 24th. He reports that butterflies were on the wing as soon as he arrived and were fairly common. Moths were also well represented, but the locality was so far north that the continuous daylight prevented collecting by means of artificial light.

REINDEER DEPOT, MACKENZIE DELTA

This locality lies just on the edge of the monotonous Mackenzie River Delta and the barren Caribou Hills. It is a transition area, comprising the Hudsonian and the Arctic zones. It marks the northernmost extension of coniferous trees and possesses some species which are indigenous only to the northwestern Arctic coastal region. A few specimens of Papilio machaon aliaska were taken on the barrens of the Caribou Hills. They presumably came from the tree-covered delta area.

ALASKA HIGHWAY

The party which operated along this route covered at least 1000 miles, and naturally encountered environmental conditions which varied all the way from dense forest to alpine tundra and permafrost terrain. Butterflies were often numerous and were taken in series, and Boloria, Colias, and Plebeius were common. Moths were scarce during the early part of the summer and could not be attracted to light or bait, probably because of the lack of darkness. However, after the first of August, when there were periods of darkness, several hundred specimens could be captured on any warm night.

Contributors: D.F. Hardwick, E.G. Munroe.

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LIST OF MEMBERS OF THE LEPIDOPTERISTS' SOCIETY

September 1948

The list is arranged alphabetically by nations, and by states or provinces in the U.S.A. and Canada. State, province, and nation names are here omitted in the address of each member. The address is followed by the lepidopterological interests, including specialties. Where only "RHOP.", "MACRO.", or "MICRO." appears, the interest is general. "LEPID." is used where interests include all three of the above groups. Following the interests among taxonomic groups are the other aspects of lepidopterology in which the member is interested. The member's name preceded by an asterisk (*) indicates Charter Membership; his name in capital letters indicates Sustaining Membership. The word "Nearctic" means America north of Mexico. For uniformity "Phalaenidae" is used for all cases, even though the equivalent name "Noctuidae" had been placed on the membership card by some members. Similarly, Speyeria, Boloria, etc. are used for the Nearctic region instead of Argynnis, Brenthis, etc. The following abbreviations are used:

LEPID. - All Lepidoptera
RHOP. - Rhopalocera (butterflies)
MACRO. - Macro-Heterocera } (moths)
MICRO. - Micro-Lepidoptera }
Coll. - Collection
Ex. - Exchange
esp. - especially

ARGENTINA

Bourquin, Fernando F., Calle Conde 1639, Buenos Aires. LEPID: esp. Argentine. Biology of LEPID. Coll.

Hayward, Kenneth J., Miguel Lillo 205, Tucuman. RHOP: esp. Argentine and Hesperiidae. Life History, Biology, etc. Coll.

AUSTRIA

Wilcke, Hermann (Dr.), Kössen/Tyrol Nr. 199. RHOP. MACRO: esp. Phalaenidae, Geometridae. Coll. Sell.

BELGIUM

Dufrane, Abel, Conservateur du Musée d'Histoire Naturelle, Avenue du Tir 69, Mons. LEPID: world, esp. MICRO. Coll. Ex.

HACKRAY, JOSEPH, Rue Simon Lobet 9, Verviers. RHOP: esp. Papilionidae, Pieridae, Nymphalidae, Lycaenidae. MACRO: Geometridae. Coll. Ex. Buy. Sell.

Janmoulle, Edward, 2 rue Ernotte, Watermael. MICRO: local, esp. Lithocolletis and other leaf-miners. Coll. Ex.

*Kiriakoff, Sergius G., Zoological Labs., Ghent University, 14 Universiteitsstraat, Ghent. RHOP: esp. Belgian Congo. MICRO: esp. Pyralidae. Phylogeny, Classification. Ex.

Overlaet, Frans G., 9 Chaussée de Louvain, Kortenberg (Brabant). LEPID. Life History, Mimicry. Coll. Ex.

BRAZIL

*Araujo, R.L. (Dr.), Instituto Biológico, P.O. Box 119-A, São Paulo. MACRO: esp. Castniidae. Coll.

d'Almeida, Remualdo F. (Dr.), Rua Viana Junier 25, Encantado, Rio de Janeiro, D.F. RHOP: esp. Ithomiinae, Pieridae, Papilionidae. MACRO: esp. Syntomidae, Arctiidae, Sphingidae, Saturnioidea. Biology. Coll. Ex. Buy.

May, Edward E. (Dr.), Caixa Postal 176, Rio de Janeiro. RHOP: esp. Papilionidae, Pieridae, Danaidae, Nymphalidae. MACRO: esp. Saturniidae. Coll. Ex. Buy.

Oiticica Filho, José (Dr.), Rua Alfredo Chaves 59, Rio de Janeiro. RHOP. MACRO: esp. Sphingidae, Saturnioidea. Morphology. Coll. Ex. Buy.

Pearson, Henry R., Caixa Postal 5151, Rio de Janeiro. RHOP: esp. Nearctic Papilionidae. MACRO: esp. Saturniidae, Sphingidae, Mimallonidae. Life History, Food Plants, etc. Coll. Ex. Buy.

Travassos, Lauro (Prof.), Instituto Oswaldo Cruz, Laboratório de Helmintologia, Caixa Postal 926, Rio de Janeiro, D.F. MACRO: esp. Arctiidae, Adelocephalidae. Coll. Ex.

BRITISH WEST INDIES

Gunter, Peter C., 22 Beechwood Ave., Cross Roads, Jamaica. RHOP: esp. of Jamaica. MACRO: esp. Sphingidae. Life History, etc. Coll. Ex. Sell.

SMITHSONIAN INSTITUTION
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NATIONAL MUSEUM

Lewis, C. Bernard, Science Museum, Institute of Jamaica, Kingston, Jamaica. RHOP: esp. of Jamaican and Cayman Islands. Coll.

Perkins, Lilly G., Sunnybank, Claremont, St. Ann, Jamaica. RHOP. MACRO: esp. Sphingidae. Sell.

CANADA

BRITISH COLUMBIA

*Guppy, Richard, R.R. 1, Marine Drive, Wellington. MACRO: all except Geometridae. Parasites, Life History. Coll. Ex. Sell.

MANITOBA

*Quelch, C.S., Transcona. LEPID: esp. Central and S. American RHOP. Coll. Ex.

NOVA SCOTIA

*FERGUSON, DOUGLAS C., Box 617, Armdale P.O. RHOP: Nearctic. MACRO: esp. Arctiidae, Geometridae; Hepialidae, Eucleidae. Life History. Coll. Ex. Buy. Sell.

*Hall, Arthur D., Great Village. MACRO: esp. Acronicta, Notodontidae, Geometridae. Coll. Ex.

ONTARIO

*Adelphe, (Brother), 162 Montreal Rd., Eastview. RHOP: esp. of eastern Canada. MACRO: esp. of e. Canada, and Phalaenidae. Coll.

*Freeman, T.N. (Dr.), Div. of Entomology, Dept. of Agriculture, Central Experimental Farm, Ottawa. RHOP: esp. of Arctic. MACRO. MICRO: esp. Tortricidae. Distribution, Speciation, etc. Coll.

*Hardwick, David F., Systematic Unit, Div. of Entomology, Dept. of Agriculture, Ottawa. MACRO: esp. Phalaenidae. Coll. Ex.

Plomley, Mervyn, 28 Burris St., Hamilton. RHOP: esp. Colias. MACRO: esp. Geometridae of eastern N.A. Coll. Ex.

PRINCE EDWARD ISLAND

Wigmore, R.H., Hunter River. MACRO: esp. Phalaenidae. Coll. Ex.

QUEBEC

*GRAY, P.H.H. (Dr.), Box 236, Macdonald College. RHOP. and MACRO: esp. local. Life History, Variation, Ecology. Coll.

*Sheppard, Arthur C., 5554 Coolbrook Ave., Montreal 29. LEPID. of Quebec. Coll. Ex. Sell.

SASKATCHEWAN

*Fitch, Richard J., Rivercourse P.O. via Lloydminster. Arctic LEPID. Sell.

CHINA

Hsiao, T.Y. (Dr.), Biology Dept., National Nankai University, Tientsin.

Jinsheng, Lu, Institutum Entomologicum Choui, Chang-Chia-Kang, Wukung, Shensi.

CUBA

de la Torre y Callejas, Salvador L. (Dr.), Playa 75 1/2, Matanzas. RHOP: esp. Eurema. Coll. Ex.

CZECHOSLOVAKIA

Cejp, Karel (Dr.), Botanical Institut, Charles University, Benatska 2, Praha II.

DENMARK

*Christensen, Georg, Norrebrogade 5, Copenhagen N.

Jensen, Heinz, Hyltebjerg Alle 54, Vanlose, Copenhagen. LEPID. Biology.

EIRE

Beirne, Bryan P. (Dr.), Dept. of Zoology, Trinity College, Dublin. MACRO. MICRO. Ecology, Distribution. Coll. Ex.

Smartt, John B., 36 Botanic Road, Glasneven, Dublin. RHOP: esp. Papilionidae, Pieridae, Hesperiidae. MACRO: esp. larger Saturniidae. Sense, Habits, Life History, Migration. Coll. Ex.

FINLAND

Hackman, Walter (fil.mag.), Helsingfors, Parkgatan 9B. MICRO: esp. Gelechiidae, Coleophoridae, Elachistidae. Coll. Ex.

ENGLAND

Carpenter, G.D.Hale (Prof.), Dept. of Entomology, University Museum, Oxford. RHOP: esp. African and Pacific island Euploea. Mimetic, warning, cryptic Coloration. Coll.(Mus.).

Evans, W.H. (Brig.), Dept. of Entomology, British Museum (Nat. Hist.), Cromwell Road, London S.W. 7. Hesperiidae.

*Ford, Edmund B. (Dr.), University Museum, Oxford. RHOP. and MACRO: illustrating biology and genetics. Evolutionary Problems, Genetics, Chemistry. Coll. Ex.

Heley, Robert G., "Lygoes", Burcott, Wing, Leighton Buzzard, Beds. RHOP: all except Hesperiidae. MACRO: esp. Sphingidae, Saturniidae. Distribution, Mimicry. Coll.Ex. Buy. Sell. Foreign Ex.

Hemming, Francis, 83 Fellows Road (Garden Flat), London N.W. 3. RHOP: esp. Palearctic and Nearctic. Coll. Ex. Buy.

*Jordan, Karl (Dr.), Zoological Museum, Tring, Herts.

*Riley, Norman D., 7 McKay Road, Wimbledon, London S.W. 20. LEPID: esp. RHOP.

Rockingham, N.W. (Lt.), Bay Tree Cottage, South Road, Hayling Island, Hampshire. RHOP. MACRO. Migration. Coll. Ex.

*Stevens, Herbert, 4 Beaconsfield Road, Tring, Herts.

Tams, W.H.T., Dept. of Entomology, British Museum, Cromwell Road, London S.W. 7.

Warren, Brisbane C.S., 3 Augusta Mansions, Folkestone, Kent. RHOP: esp. Satyridae, Nymphalidae. Life History, Distribution. Coll.

Williams, C.B. (Dr.), Rothamsted Experimental Station, Harpenden, Herts. Migration, Populations, Ecology. Coll.(migrants).

FRANCE

Bourgogne, Jean, Muséum Nat. d'Histoire Naturelle, 45 bis, Rue de Buffon, Paris 5e. RHOP: esp. Melitaea s.l. MACRO: esp. Psychidae. Coll.

Dujardin, F., 25 rue Guiglia, Nice.

Fonquernie, Pierre, 114, Boulevard d'Angleterre, La Roche-sur-Yon (Vendée).

Herbulot, Claude, 31 Avenue d'Eylau, Paris XVIe. MACRO: esp. Geometridae. Coll. Ex. Buy.

LeCharles, Louis, 22 Avenue des Gobelins, Paris Ve. RHOP. MACRO: esp. Zygaenidae. MICRO: Crambidae, esp. Crambus. Biology. Coll. Ex.

LeMarchand, S., 125, rue de Rome, Paris (17).

Rousseau-Decelle, Georges, 3, rue de Monceau, Paris 8.

*Stempffer, Henri, 4, Rue Saint Antoine, Paris 4me. RHOP: esp. Lycaenidae (Holarctic and African particularly).

Varin, Gilbert, 4, avenue de Joinville, Joinville-le-Pont (Seine). RHOP: esp. Nymphalidae, Satyridae. Study of races (subspp.), Geography, Distribution. Coll. Ex.

*Varnier, , Pension de Famille, "Vieux Moulin", Pont par Semur (Cote d'Or).

Viette, Pierre P., 45 bis, Rue de Buffon, Paris V. MICRO: esp. Homoneura (Micropterygidae, Eriocraniidae, Hepialidae). ♂ genitalia. Coll. Ex.

GERMANY

Albrecht, Paul, (1) Berlin Rummelsburg, Friedrichstrasse 108. RHOP. MACRO: esp. Sphingidae, Saturnia. Coll. Ex.

de Lattin, Gustaf J. (Dr.), Geilweilerhof, Post Siebeldingen (22a) über Landau/Pfalz, Forschungsinstitut f. Rebenzüchtung, French Zone. RHOP: Holarctic, esp. Satyridae. MACRO: Holarctic, esp. Acronictinae and Bryophilinae. MICRO: esp. Palearctic. Distribution, Evolution of Species, Genetics. Coll. Ex.

HUNGARY

Gozmány, Lancelot A. (Dr.), Budapest, XII. Cyóri ut 1. II. 14. RHOP: esp. Argynnidae, Pieridae, Papilionidae, Carterocephala. MACRO: esp. Zygaenidae, Leucanidae (Nonagria, etc.). MICRO: esp. Crambidae, Tortricidae, Pyralidae. Helophil LEPID. (swamp biota). Coll. Ex. Sell.

INDIA

Himalayan Butterfly Co., Shillong, Khasi Hills.

ITALY

Verity, Roger R. (Dr.), Caldine (Firenze). RHOP: esp. Holarctic. Coll. Ex.

JAPAN

Jablonski, Raymond J., Med. Det. 13th F.A.Bn., A.P.O. 24, Unit 4, c/o Postmaster, San Francisco, Calif., U.S.A. (U.S. Army on Kyushu. See Wisconsin). RHOP: esp. Papilionidae, Thecla. Coll. Ex.

Okada, Yoshio, Editor, Lepidopterological Society of Japan, Yanagida-Cho, Saga, Kyoto.

Shirôzu, Takashi, Entomological Lab., Dept. of Agriculture, Kyushu University, Fukuoka. RHOP. Life History, Food Plants, Distribution. Coll.

JAVA

Diakonoff, A. (Dr.), Zoological Museum, Buitenzorg. MICRO: esp. of South Asia. Coll. Ex. Buy.

NETHERLANDS

Vari, L., Sanderijnstraat 50, Amsterdam W 2. MICRO. Coll. Ex. Buy. Sell.

PHILIPPINES

Uichanco, Leopoldo B. (Dr.), Dean of College, Laguna. RHOP. Distribution. Coll. being rebuilt.

PORTUGAL

da Silva Cruz, Maria Amelia, Quinta de S. Joaõ, Candal, Vila Nova de Gaia. RHOP: esp. Melitaea. MACRO: esp. Geometridae. Migration. Coll. Ex.

SPAIN

MARTEN, WERNER, calle Guillermo Tell, 44, Barcelona. RHOP. MACRO: esp. Zygaena. MICRO. Migration, Biogeography. Coll.

*ROBERT, JOHN H., 41 Ronda San Antonio, Barcelona. RHOP: esp. Papilionidae and Pieridae of world; Holarctic Lycaenidae, and Basilarchia, etc. Coll. Ex. Buy.

TORRES, JUAN, 1 Calle Dr. Romagosa, Valencia. RHOP: esp. Papilionidae, Pieridae (Delias, Catopsilia), Danaidae, Heliconiidae, Nymphalidae, Morphidae. MACRO: esp. Zygaenidae, Arctiidae (Arctia, Callimorpha), Saturniidae, Sphingidae, Uraniidae. Life History. Coll. Ex. Buy.

VILARRUBIA, ANTONIO, Instituto Municipal de Ciencias Naturales, Apartado 593, Barcelona.

SWEDEN

Bryk, Felix, Naturhistoriska Riksmuseum, Entomologiska Avdelningen, Stockholm 50. RHOP: esp. Parnassiidae. MACRO: esp. Drepanidae. Wing Venation Teratology, Sphragidology, Linneana.

Nordström, Frithiof (Dr.), Kungsholmstorg 1, Stockholm. MACRO: esp. Phalaenidae, Geometridae, north Palearctic and circumpolar. Life History. Coll. Ex. Buy.

SWITZERLAND

Romieux, Jean, chemin des Crêts de Champel 20, Geneva. MICRO: esp. Aegeriidae, Psychidae, Coleophoridae, Scythrididae. Migration. Ex.

UNITED STATES OF AMERICA

ALABAMA

*Chermock, Ralph L. (Dr.), Dept. of Biology, University of Alabama, University. RHOP: esp. Satyrinae. Distribution and variation. Coll. Ex. Buy.

ARIZONA

*Bauer, David L., P.O. Box 469, Yuma. RHOP: esp. machaon-asterius group of Papilionidae, Anthocharis, Euchloe, Chlosyne, Polygonia, and Riodinidae. Hemileuca. Distribution and Life History. Coll. Ex. Buy. Sell.

CALIFORNIA

*BAUER, WILLIAM R., 235 Liberty St., Petaluma. MACRO. Life History and Collecting Methods. Coll. Ex. Buy.

*Bio-metal Associates, P.O. Box 346, Beverly Hills.

Breedlove, Richard W., 2370 Julian Ave., San Diego 2. RHOP: esp. Papilionidae. Coll. Buy.

Cobb, Melvyn G., 837 W. 36th Place, Los Angeles 7. RHOP. MACRO. Coll. Ex. Buy.

*COMSTOCK, JOHN A. (Dr.), P.O. Box 158, Del Mar, San Diego County. LEPID. Life History. Coll.

*Creelman, James L., 2214 Logan Ave., San Diego 2. RHOP. Coll.

*CRICKMER, NOEL, Borrego, Julian P.O. LEPID. Collect all LEPID. for specialists. Coll. Ex.

*Davies, Thomas W., 9734 Castlewood St., Oakland 5. RHOP: esp. Nearctic, European, tropical. Saturniidae and Sphingidae. Coll. Ex. Buy. Sell.

*Dickenson, Ronald, P.O. Box 563, Atascadero. RHOP. Catocala. Coll. Ex.

DOUDOROFF, MICHAEL (Prof.), Dept. of Bacteriology, University of California, Berkeley 4. RHOP. Coll.

Essig, Edward O. (Prof.), 112 Agriculture Hall, University of California, Berkeley 4. LEPID: general western Nearctic, economic. University Coll.

*Evans, William H., 8711 La Tuna Canyon Road, Roscoe. RHOP: esp. Pieridae, Speyeria, Melitaea, Lycaenidae. MACRO: esp. Agaristidae, Annaphila, Heliothiinae, Geometridae. MICRO: esp. Titanio, Pterophoridae, Aegeriidae. Study and photography of Life History. Coll. Ex. Sell.

*Ford, Robert J., 3266 Ardmore Ave., South Gate. LEPID. Coll. Ex.

*Frederick, E.J., 5508 E. Gage Ave., Bell. LEPID: local and tropical.

*Friday, F.W., 2506 N. Highland Ave., Hollywood 28. RHOP. Coll. Ex. Buy. Sell.

GLOOR, EUGENE E. (Dr.), 14 Maple Ave., Watsonville.

Graves, John D., 1711 Short St., Berkeley 2. RHOP. MACRO. Coll. Ex. Buy.

*Guedet, Edward F. (Rev.), 1818 Eddy St., San Francisco 15. MACRO: esp. Geometridae. Coll. Ex. Buy.

HALBERT, RICHARD L., 1201 W. 30th St., Los Angeles 7. MACRO: esp. Saturniidae. Life History, Cross-breeding. Coll. Ex. Buy. Sell.

*Hammer, William A., 5300 Walnut St., Oakland 2. RHOP. MACRO. Coll. Ex. Buy.

*HEID, GRAHAM, 1107 N. Beverly Glen Blvd., West Los Angeles 24. RHOP: esp. Theclinae of world. Life History. Coll. Ex.

HENNE, CHRISTOPHER, 694 So. Grand Ave., Pasadena. MACRO. of Calif. MICRO. of Calif. Life History. Coll. Ex. Sell.

HEWES, LAURENCE I. (Dr.), 114 Edgewood Ave., San Francisco 17. RHOP: esp. Anthocharis, Papilionidae, Minois. Coll. Ex.

*Hulbirt, Lowell H., 622 No. Bright Ave., Whittier. RHOP: esp. Lycaenidae and Hesperiidae. Coll. Ex.

Jacksen, Ray M., 100 S. Fuller Ave., Los Angeles 36. RHOP: esp. Euphydryas. MACRO. MICRO. Coll. Ex.

*Kirkwood, Carl W., Box 47, Summerland. LEPID: Nearctic. Coll. Ex. Buy.

*MACK, MYRTLE A. (Mrs.), Box S, Livermore. RHOP: esp. Speyeria, Colias, Parnassius. Coll. Ex.

*MARTIN, LLOYD M., Los Angeles County Museum, Exposition Park, Los Angeles 7. RHOP: esp. Speyeria, Euphydryas, Hesperiidae. MACRO: esp. Heliothiids, Catocala, Arctiidae. MICRO: esp. Aegeriidae. Life History of Southwest species. Museum Coll., Ex.

*Mattoni, Rudolf H.T., V-29 Terrace War Housing, Richmond. RHOP: esp. Euphydryas, Plebeinae (esp. Philotes). MACRO: esp. Heliothiinae. Evolutionary Genetics, Life History, Distribution. Coll. Ex. Buy. Sell

*McHENRY, PADDY B., 1032 E. Santa Anita, Burbank. RHOP: Nearctic. Original descriptions of Nearctic Rhop. Coll.

*Meyer, William T., 4450 Kingswell Ave., Los Angeles 27. LEPID. Coll. Ex. Buy. Sell.

*PARKER, DWIGHT E., 1033 So. Beacon Ave., Los Angeles 15. RHOP: Nearctic. Life History. Coll. Ex.

*REEVES, ROBERT T., 318 W. Olympic Blvd., Los Angeles 15. RHOP. and MACRO: Southwestern U.S.A. Life History, Biology. Coll.

*Reid, Robert H., R.R.#3, Box 164, Hemet. Coll. Ex.

*Rindge, Frederick H., 437 Ocean View Ave., Berkeley 7. MACRO: esp. Geometridae. Life History. Coll. Ex. Buy. Sell.

*Roberds, Joseph, 2022 Huntington, Redondo Beach. LEPID.

SALA, FRANK P., 2420 N. Eastern Ave., Los Angeles 32. RHOP. MACRO: esp. Saturniidae, Catocala, Phalaenidae. MICRO: esp. Aegeriidae, Cossidae. Life History. Coll. Ex. Sell.

*SMITH, CLAUDE I., 161 South Sixteenth Street, Apt. 1-B, Richmond. RHOP: esp. Pieridae, Riodinidae, Lycaenidae. MACRO: esp. Catocala, Hemitheinae, Cucullinae, Amphipyrinae, Heliothiinae. MICRO: Pterophoridae, Aegeriidae. Life History. Coll. Ex. Sell.

*SPERRY, JOHN L., 3260 Redwood Drive, Riverside. RHOP: world. MACRO: world, esp. Geometridae. Coll. Ex. Buy.

*Sternitzky, Robert F., Monte Vista Cabins, Star Route, Laytonville, Mendocino County. RHOP. MACRO. Coll. Ex. Buy. Sell.

*Thorne, Fred T., 1298 Merritt, Route 1, El Cajon. RHOP: esp. Theclinae. Life History. Coll. Ex.

*TILDEN, JAMES W., 10 Eagle Hill Terrace, Redwood City. RHOP: esp. Hesperioidea, Lycaenidae. MACRO: esp. Phalaenidae, Geometridae. MICRO. Food Relationships, Ecology. Coll. Ex. Buy.

*WEBER, BERNIE H., 359 E. Angeleno Ave., Burbank. RHOP: Nearctic and Cuban. Coll. Ex. Buy. Sell.

Williams, Evelyn G. (Mrs.), North San Juan, Nevada County. RHOP. MACRO. Life History. Coll.

*WIND, ROBERT G., Route 1, Box 145, Livermore. RHOP: world. MACRO: esp. Saturniidae. Coll. Ex. Buy. Sell.

COLORADO

*Brown, F. Martin, Fountain Valley School, Colorado Springs. RHOP: esp. Pieridae and Satyridae of neotropics. Distribution. Coll. Ex. Buy.

*Eff, J. Donald, 820 Grant St., Boulder. RHOP: esp. Melitaea, Euphydryas, and Arctic species. Coll. Ex.

Kostreva, Samuel, Jr., 317 E. Boulder St., Colorado Springs. RHOP. MACRO. Coll. Ex. Buy. Sell.

Minor, W.C., P.O. Box 62, Fruita. LEPID: esp. Rocky Mts. RHOP. Coll. Ex. Buy. Sell.

*Nelson, Carl J.E., 424 S. Cedar St., Colorado Springs. RHOP. MACRO. Coll. Ex. Buy.Sell.

Rotger, Bernard (Rev.), St. Joseph's Church, Capulin. RHOP. Coll. Ex.

Schryver, C.D., 4561 Wolff St., Denver 12. RHOP. Coll. Ex.(esp. Rocky Mt. Rhop.).

CONNECTICUT

*Carpenter, S.C., Box 1344, Hartford 1. RHOP. MACRO. Food Plants.

*REMINGTON, CHARLES L. (Dr.), Osborn Zoological Lab., Yale University, New Haven 11. RHOP: Genetics and Life History. MACRO: Life History.

*REMINGTON, JEANNE E. (Mrs.), c/o Osborn Zoological Lab., Yale University, New Haven 11. Gall-making LEPID: Ecology.

*Schroeter, Otto H., 613 Williams St., New London. MACRO: esp. Sphingidae, Saturniidae, Catocala. Life History.

*TOWERS, ABNER A., Old Danbury Road, Westport. RHOP. and MACRO: Nearctic. Coll. Ex.

*Wilhelm, Herman P., Buckingham Road, R.D. 1, Willimantic. RHOP. MACRO. Coll. Ex. Buy. Sell.

DISTRICT OF COLUMBIA

*CLARK, AUSTIN H., U.S. National Museum, Washington 25. RHOP.

*FIELD, WILLIAM D., Division of Insects, U.S. National Museum, Washington 25. RHOP: esp. Lycaenidae (neotropical). MACRO: esp. Arctiidae (Lithosiinae). Life History of Rhop.

Shappirio, David G., 4811 Seventeenth St., N.W., Washington 11. LEPID. Chemistry of Insect Pigments. Coll.

*Williams, Joseph L. (Dr.), Box 283, Howard University, Washington 1. MICRO.

FLORIDA

*Berry, Dean F., Box 146, Orlando. RHOP: esp. Fla. Skippers. MACRO: esp. Catocala, Saturniidae, Sphingidae. Coll. Ex.

*Grimshawe, Florence M. (Mrs.), 766 N.W. 13 Ave., Miami. RHOP: esp. Papilionidae. MACRO: esp. Sphinx. Life History. Coll. Sell.

*KING, HAROLD L., (changed address, see page 12)

*Nicolay, Stanley S. (Major), Shore Patrol Officer, Naval Air Training Base, Pensacola. LEPID. Coll. Ex.

*Young, Frank N. (Dr.), Dept. of Biology, University of Florida, Gainesville. Extinction of Rhop. by human agencies.

GEORGIA

*EUSTIS, HENRY W., Woodbine Road, Augusta. RHOP. MACRO. Classification, Distribution. Coll. Ex. Buy. Sell.

*Fattig, P.W., Box 788, Emory University. LEPID. Coll.

*Harris, Lucien, Jr., 61 Clarendon Ave., Avondale Estates. RHOP. MACRO: esp. Catocala. Coll. Ex.

Johnson, Frank, Griffen. MACRO: esp. Saturniidae. Coll. Buy.

*Smith, M. Eugene, Route 2, Newnan. RHOP. MACRO. Life History.

TERRITORY OF HAWAII

*Calkins, Virgil F., P.O.Box 461, U.S. Immig.-Naturalization Service, Honolulu 9, Oahu. RHOP: Nearctic. MACRO: esp. Sphingidae, Ceratocampidae, Catocala. Coll. Buy. Sell.

ILLINOIS

Banks, Leslie, 900 Gunnison St., Chicago 40. RHOP. MACRO: esp. Geometridae, Heliothiinae, Notodontidae. Coll. Ex. Buy.

*BRISTOL, MAURICE L., 511 May St., Elgin. RHOP. MACRO: esp. Apantesis, Catocala, Phalaenidae. MICRO: esp. Sesia, Limacodidae. Life History, Collecting and Rearing Methods. Coll. Ex. Buy.

Emerson, Kenneth, 806 W. Main St., Urbana.

*Gerhard, William J., Curator of Insects, Chicago Natural History Museum, Roosevelt Road and Lake Shore Drive, Chicago 5. RHOP. MACRO.

*Glenn, Murray O., Magnolia. MACRO: esp. Phalaenidae. MICRO. Life History. Coll. Ex.

*HOLLEY, F.E., 3 E. Parkside, Lombard. RHOP: N. and S. America. N. and S. American Sphingidae, Saturniidae, and Ceratocampidae. Life History. Coll. Ex. Buy.

*IRWIN, RODERICK R., 602 S. Park St., Streator. RHOP. Coll. Ex. Buy.

Kistner, David H., 5031 N. Kolmar Ave., Chicago 30. RHOP. Coll. Ex.

*LAUCK, ALBERT G., 2716 Grandview Ave., Alton. RHOP: esp. Oeneis, Erebia, Boloria, and Lycaenidae. Coll. Ex. Buy.

*McElhose, Arthur L., 816 N. Belmont Ave., Arlington Heights. LEPID: esp. MICRO. Coll. Ex.

*PANSKE, LEONARD G., 878 N. Hermitage Ave., Chicago 22. RHOP. MACRO. Coll. Buy.

Phillips, Leonard S., Loyola University Medical School, 706 S. Wolcott Ave., Chicago. RHOP. MACRO: esp. Catocala. Coll. Ex. Buy.

Rutkowski, Frank E., St. Bede College, Peru. MACRO: esp. Saturniidae, Phalaenidae, Sphingidae. Life History. Coll. Buy.

Sasko, Vladimir G. (Prof.), 1937 W. Chicago Ave., Chicago 22. RHOP: esp. Papilionidae, Nymphalidae, Morpho, etc. of western hemisphere. MACRO: esp. Sphinx, Saturniidae, Lasiocampidae and smaller moths, Catocala. Life History. Coll. Ex. Buy. Sell.

*Schoenherr, William H., P.O. Box 673, Danville. RHOP: esp. Pieridae. MACRO: esp. Sphingidae. Life History, Migration, Distribution. Coll. Ex. Buy. Sell.

*Whittaker, Robert H., 203 Vivarium Bldg., Champaign. RHOP. Ecology, Distribution. Coll.

*WOODCOCK, HAROLD E., 6115 Newport Ave., Chicago 34. LEPID. Coll. Ex. Buy.

*Wyatt, Alex K., 5842 N. Kirby Ave., Chicago 30. RHOP. MACRO: esp. Eubaphe, Papaipema, Heliothiinae. MICRO. Life History. Coll. Ex. Sell.

Wren, George R., 5806 Drexel Ave., Apt. 2A, Chicago 37. RHOP: Satyrinae, esp. Cercyonis. Genetic and environmental causes of variation. Coll. Ex.

IDAHO

MANNING, JAMES H., 1515 N. 26th, Boise. RHOP: Nearctic. MACRO: esp. Catocala, Sphingidae. Coll. Ex.

KANSAS

*STALLINGS, DON B., 216 W. First St., Caldwell. RHOP: esp. Theclinae, Icarius, Philotes, Megathymus, Amblyscirtes, Hesperia. MACRO: esp. Sphingidae, Saturniidae, Catocala. Melittia. Subspecific Distribution and Seasonal Forms. Coll. Ex. Buy. Sell.

KENTUCKY

*Bishop, John A. (Dr.), Jeffersontown. RHOP. MACRO. Coll. Ex. Buy. Sell.

*Cook, Carl, Crailhope. RHOP: esp. Papilionidae of world. Coll. Ex. Buy.

MAINE

*Brower, Auburn E. (Dr.), 5 Hospital St., Augusta. RHOP: Nearctic. MACRO: esp. Catocala of eastern America. MICRO: esp. Aegeriidae of eastern America. Life History. Coll. Ex. Buy. Sell.

*GREY, L. PAUL, R.F.D., Lincoln. RHOP: esp. Argynninae. Coll. Ex. Buy. Sell.

MARYLAND

Cross, Frank C., 9413 Second Ave., Silver Spring. RHOP.

Davidson, W.M., Box 66, Laurel. RHOP. MACRO. Coll.

Fales, John H., 1917 Elkhart St., Silver Spring. RHOP: esp. of Maryland. Migration. Coll. Ex.

*Reese, Jean (Miss), Lone Hickory Farm, Owings Mills. LEPID. Coll.

MASSACHUSETTS

*Alexander, Charles P. (Prof.), Fernald Hall, University of Massachusetts, Amherst. Classification and Distribution.

*Bailey, Norman S. (Prof.), 16 Neponset Ave., Hyde Park 36. RHOP: esp. Papilionidae. MACRO: esp. Sphingidae, Saturniidae. Life History, Biology, Ecology. Coll. Ex.

Cady, M.E., 21 Border St., Dedham.

CARPENTER, A.J., 236 Huntington Ave., Boston.

*Carpenter, Frank M. (Prof.), Biological Labs., Harvard University, Cambridge 38. Fossil Insects.

*Coher, Edward I., 12 Harvard Terrace, Allston 34.

*Crawford, John W. (Dr.), 109 Pinckney St., Boston 14.

Denton, Carrie D. (Miss), 11 Denton Road, Wellesley 81. RHOP. MACRO. Coll.

*FAUTEUX, JACQUES M., P.O. Box 162, Framingham Center.

Ghani, M.A., Fernald Hall, University of Massachusetts, Amherst.

*Gottschalk, Carl W. (Dr.), Dept. of Physiology, Harvard Medical School, 25 Shattuck St., Boston 15. RHOP: esp. Boloria, Oeneis, Colias. Breeding. Coll. Ex. Buy.

*Johnston, William M., 88 Perry St., Brookline. RHOP: New England. Coll.

Kamp, G.W., 44 Holmes Road, Dedham.

*Learned, Elmer T. (Dr.), 542 Maple St., Fall River. RHOP. MACRO. Genetics.

McCabe, David T.,58 Thackeray Road, Wellesley Hills 82. RHOP. Coll.

*Murphy, Gardner, 16 Chauncy St., Cambridge.

*Robinson, Paul F., 139 Union St., Westfield. RHOP: esp. Hesperiidae of New England. Physiology of reproduction and development. Coll. Buy.

*ROGERS, W. PRESCOTT, 353 Lincoln Ave., Fall River. RHOP. Coll. Ex. Buy.

*Smith, Marion E. (Dr.), Fernald Hall, University of Mass., Amherst. MACRO: esp. Arctiidae. Life History, Taxonomy. Univ. Coll.

*Werner, Floyd G., Biological Labs., Harvard University, Cambridge 38.

MICHIGAN

*Beebe, Ralph, 4169 Tenth St., Ecorse 29. MICRO. Distribution and Food Plants in Michigan. Coll.

*Clench, Harry K., 1270 Sudbury, Willow Run Village. RHOP: esp. Lycaenidae of world. Phylogeny, Distribution. Coll. Ex.

*Dreisbach, Robert R., 301 Helen St., Midland. LEPID: of Michigan. Coll. Ex.

*Hovanitz, William (Dr.), Department of Biology, Wayne University, Detroit. RHOP. Genetics.

*Hynes, Vonta P. (Mrs.), 152 Meachem Ave., Battle Creek. LEPID: local. Life History. Coll. Ex. Buy. Sell.

*McALPINE, WILBUR S., 636 S. Woodward Ave., Birmingham. RHOP: esp. Riodinidae. MACRO: local. Life History. Coll. Ex. Buy. Sell.

*Newman, John H., 9821 Peer Road, R.F.D. 1, South Lyon. LEPID: of Michigan. Coll. Ex.

*Nielsen, Mogens C., 13661 Castleton Ave., Detroit 27. RHOP: Nearctic and exotic. MACRO: esp. Saturniidae, Sphingidae, Ceratocampidae, Catocala, Nearctic and exotic. Life History. Coll. Ex. Buy.

PRESTON, FLOYD W., (changed address, see page 12)

Richard, Roger E., 1832 N. Gulley Road, Dearborn. LEPID: photography of Life History.

*Vogel, Harold A., 9121 Kresge St., Detroit 13. MACRO. Coll. Ex.

MINNESOTA

*Sweetman, Harry F., 910 S. Sibley Ave., Litchfield. RHOP: Nearctic. MACRO: Nearctic. Life History. Coll. Ex. Buy. Sell.

MISSISSIPPI

*Mather, Bryant, P.O. Box 217, Clinton. RHOP. Coll.

MISSOURI

*MEINERS, EDWIN P. (Dr.), 6651 Enright Ave., St. Louis 5. RHOP. MACRO: esp. Arctiidae. Coll. Ex. Buy.

*O'BYRNE, HAROLD I., Iberia. LEPID. Ecology, Behavior. Coll. Ex.

*Pickel, Benjamin H., 3619 Gordon Ave., Overland 21. RHOP: Nearctic, esp. Theclinae. Migration. Ex. Buy. Sell.

*REMINGTON, P. SHELDON, 5570 Etzel Ave., St. Louis 12. RHOP: Hesperiidae, esp. Megathymus and Hesperia, Lycaenidae, Oeneis, Erebia. Sphingidae, Saturniidae, Catocala. Coll. Ex. Buy.

*Thomas, George W., 107 Whitten Hall, University of Missouri, Columbia. MACRO: esp. Plusiinae. Coll. Ex. Buy. Sell.

NEW HAMPSHIRE

*Gerould, John H. (Prof.), 36 Occom Ridge, Hanover. RHOP: Pieridae, esp. Colias. MACRO: esp. Bombyx. Genetics, ecology of Colias; Anatomy and circulation of Bombyx. Mimicry. Coll.

*Lennox, Donald J., R.F.D. 1, Whitefield. RHOP: Nearctic. MACRO: New England. Coll. Ex.

NEW JERSEY

*Buchholz, Otto, 493 Markthaler Place, Roselle Park. RHOP. and MACRO: Nearctic. Coll. Ex. Buy.

CADBURY, JOHN W. 3rd, Spung Hollow, R.D. 1, Pemberton. MACRO: esp. Phalaenidae, Sphingidae, Notodontidae, Nearctic. Coll. Ex. Buy. Sell.

Comstock, William P., 117 Lincoln Ave., Newark 4. RHOP: esp. Anaea, Lycaenidae. MACRO: esp. Saturniidae.

*DOS PASSOS, CYRIL F., Washington Corners, Mendham. RHOP: Satyridae, esp. Oeneis. Coll. Buy.

*Ehrlich, Paul R., 538 Academy St., Maplewood. RHOP: esp. Papilionidae, and tropical forms. MACRO: Nearctic Sphingidae and Saturniidae. MICRO. Systematics. Coll. Ex. Buy. Sell.

*RAWSON, GEORGE W. (Dr.), c/o Ciba Pharmaceutical Products Inc., Lafayette Park, Summit. RHOP: Nearctic. MACRO: esp. northeastern U.S.A. Distribution, Ecology. Coll. Ex. Buy.

NEW YORK

*Bell, Ernest L., 150-17 Roosevelt Ave., Flushing. RHOP: esp. Hesperiidae.

*Butterfly Store, 77 Madison Ave. at 28th St., New York. Buy. Sell.

BUTTERFLY WORLD SUPPLY HOUSE, 289 E. 98th St., Brooklyn 12. Ex. Buy. Sell.

Buxbaum, Paul, 360 Central Park West, New York 25. RHOP: esp. Papilionidae. Coll. Ex. Buy.

Candidus, Edward S., 1846 New York Ave., Brooklyn 10. RHOP: esp. Papilionidae, Ornithoptera, Morpho, of S. America, Africa, Indonesia, Mexico. MACRO: same regions as above. Coll. Buy.

*Casselberry, Raymond C., 55 Edgemont Road, Scarsdale. RHOP. MACRO: esp. Catocala, Sphingidae. Coll. Ex. Buy. Sell.

*Crystal, Bruce W., 999 President St., Brooklyn 25. RHOP: esp. Papilionidae, Nymphalidae. Coll.

Farquhar, Donald W. (Dr.), 185 Claremont Ave., New York 27. RHOP. MACRO. Life History, Distribution, Food Plants. Coll. Ex.

*Forbes, William T.M. (Prof.), Comstock Hall, Cornell University, Ithaca. RHOP: esp. Ithomiinae. MACRO. MICRO. Zoogeography, Basic Classification. Coll. Buy.

*Frederick, Albert C., 6 Matilda St., Albany 2. RHOP: esp. Lycaenidae, Hesperioidea. Coll. Ex. Buy.

*HEINEMAN, BERNARD, 247 Church St., New York 13. RHOP: of Jamaica. MACRO: esp. Catocala. Coll.

Hellman, Geoffrey T., 25 W. 43 St., New York 18.

*HESSEL, SIDNEY A., 8 Woodmere Blvd. S., Woodmere, Long Island. RHOP: northeastern U.S.A. MACRO: Nearctic Catocala, others of northeastern U.S.A. Life History. Coll. Ex.

*KEJI, JOSEPH A., Biggs Hospital, Ithaca. RHOP. MACRO. Life History.

*KELLNER, JOHN J., 5124 Beverly Road, Brooklyn. RHOP. MACRO. Entomological literature. Coll. Ex. Buy.

*KIMBALL, CHARLES P., 205 Culver Road, Rochester. LEPID. Distribution, Chemical Baits. Coll. Ex. Buy.

*KLOTS, ALEXANDER B. (Prof.), Dept. of Biology, 17 Lexington Ave., New York 10. RHOP: Nearctic Colias, Pieridae, Boloria. MICRO: Pyralididae, esp. Crambinae. Holarctic and Arctic-alpine Distribution. Coll. Ex. Buy.

Kolyer, John M., 23 High St., East Williston. RHOP: esp. Papilionidae. MACRO. Life History. Coll. Ex.

*McDunnough, J. (Dr.), Research Associate, Dept. of Insects, American Museum of Natural History, Central Park West at 79th St., New York 24. LEPID: esp. Saturniidae.

*McELVARE, ROWLAND R., 76 Ivy Way, Port Washington, L.I. MACRO: esp. Heliothiinae. Coll. Ex. Buy.

*Michener, C.D. (Dr.), American Museum of Natural History, Central Park West at 79th St., New York 24. RHOP. MACRO: esp. Saturniidae.

Miller, Howard C., 222 N. Collingwood Ave., Syracuse 6.

*Mills, Brooks B., Fox Lane, Mt. Kisco, R.F.D. 2. RHOP. and MACRO: eastern Nearctic. Life History. Coll. Ex. Sell.

Morris, John W., 2704 W. Genesee St., Syracuse 9. RHOP: esp. Papilionidae. MACRO: esp. Sphingidae. Life History. Coll. Ex.

*MUELLER, PAUL H., 965 Franklin Ave., Brooklyn 25. RHOP. MACRO. Coll. Buy.

*NABOKOV, VLADIMIR (Prof.), Cornell University, Ithaca. RHOP: Holarctic; Lycaenidae. MACRO: Palearctic.

*RUPERT, LAURENCE R., 1122 S. Main St., Horseheads. MACRO: Geometridae, esp. Ennominae. Life History. Coll. Ex. Buy.

SANFORD, LEONARD J., American Museum of Natural History, 79th St. and Central Park West, New York 24. RHOP: Satyridae, esp. Enodia. MACRO: esp. Saturniidae, Sphingidae. Distribution, Range, Habitat, etc. Ex.

SHERWOOD, COLLINS E., Newark Valley. RHOP: esp. Papilionidae, Pieridae. MACRO. Coll. Ex.

*Shoumatoff, Nicholas, Bedford. LEPID: Jamaica and eastern U.S.A. Distribution, Ecology. Coll.

*SPELMAN, MORRIS, 2781 Grand Concourse, New York 58. RHOP: esp. Pieridae. MACRO: esp. day-flying. Bait and other attractants. Ex. Buy. Sell.

*Zappalorti, Michael A., 7415 3rd Ave., Brooklyn 9. RHOP: neotropical, S.A. only. Coll. Ex. Buy. Sell.

NORTH CAROLINA

Sellers, Martha M. (Miss), 315 Probart St., Brevard. RHOP. MACRO. Coll. Ex.

NORTH DAKOTA

Adler, Julius, 407 Oak St., Grand Forks. RHOP: Nearctic. Coll. Ex.

OHIO

*BAKER, CLEMENT W., P.O. Box 455, Waynesburg. RHOP. MACRO: esp. Sphingidae and Catocala. Coll. Ex. Buy.

Bock, Theodore, 70 Ehrman Ave., Cincinnati 20. RHOP: esp. Ornithoptera, Papilionidae, Morpho, Agrias, Caligo, Telia, Thecla, Precis, Salamis, Charaxes. MACRO: esp. Rothschildia, Arsenura, Automeris, Attacus, Castnia, Arctiidae, U.S. Catocala. Coll. Ex. Buy. Sell.

*Braun, Annette F. (Dr.), Box 41C, R.R. 13, Cincinnati 30. MICRO: esp. from Cosmopterygidae to Hepialidae (Nos. 7672 to 9876 of McDunnough List). Life History. Coll. Ex.

*Carr, Robert, 5151 Colerain Ave., Cincinnati 23. RHOP: esp. Papilionoidea, Hesperioidea. MACRO: esp. Saturniidae, Sphingidae, Sesiidae, Phalaenidae. Life History. Coll.

Cobb, Robert B., 594 Asbury Road, Cincinnati 30. RHOP. MACRO. Coll. Ex. Buy. Sell.

Duhlmeier, William, 2535 Indian Mound Ave., Norwood 12.

*Ferguson, Elias A., 1213 Bellflower Ave.S.W., Canton 4. RHOP: esp. Papilionidae, Boloria, Colias, of Far North. MACRO: esp. Catocala. Life History. Coll. Ex. Buy.Sell.

*Lindsey, A.W. (Prof.), Dept. of Biology, Denison University, Granville. RHOP: esp. Nearctic Hesperioidea. Taxonomy.

*PRICE, HOMER F., Payne. RHOP. Coll.

Romine, Ray, 954 Westwood Drive, Marion. LEPID.

*Smalley, Stephen B., Box 597, Route 8, Cincinnati 30. RHOP: world. Life History. Coll. Ex. Buy.

Thomas, Edward S., Ohio State Museum, Columbus 10. RHOP: esp. Hesperioidea, Hairstreaks. MACRO: esp. Catocala. Life History, Distribution in Ohio. Museum Coll.

*Voss, Edward G., American Commons Club, Granville. LEPID: of Michigan. Coll. Ex.

OREGON

*Albright, Ray, Dayton. RHOP. Coll. Ex.

*BAKER, JAMES B., Baker. LEPID. Coll. Ex.

*DAVIS, JOHN E., State Dept. of Agriculture, Salem. MICRO: esp. fruit-infesting species. Coll. Ex.

*MACY, RALPH W. (Prof.), Dept. of Biology, Reed College, Portland 2. RHOP. Biology. Coll. Ex. Buy.

RICE, HAROLD E., Route 2, Box 272, Eugene. LEPID: esp. Nearctic and Australian; world Papilionidae. Coll. Ex.

PENNSYLVANIA

*ACKERMANN, OTTO, 639 Walnut St., Irwin. RHOP. MACRO. Coll. Sell(plastic mounts).

*Adams, J.W., 32 Pleasant St., Philadelphia 19. RHOP: esp. Nearctic Hesperiidae. Taxonomy; Distribution in Relation to Food Plants. Coll. Ex.

*CARY, MARGARET M (Mrs.), Ellet Lane and Wissahickon Ave., Mt. Airy, Philadelphia 19. MACRO: esp. Sphingidae and Catocala. Life History. Coll. Buy.

Ehle, George, 314 Atkins Ave., Lancaster. RHOP: esp. Lycaenidae. Coll. Sell.

*Jay, William, 6358 McCallumn St., Germantown, Philadelphia. RHOP: esp. Papilionidae, Speyeria. MACRO: esp. Sphingidae, Catocala. Coll. Buy.

*MERKER, CHARLES G., 1520 Cooper St., Pittsburgh 12. LEPID. Coll. Ex. Buy. Sell.

*Moyer, Howard C., Box 238, R.D. 2, Sinking Springs. RHOP. MACRO. Coll. Ex. Buy. Sell.

*Napier, Arthur H., 503 E. Willow Grove Ave., Chestnut Hill, Philadelphia. RHOP: Nearctic. MACRO: esp. Sphingidae, Catocala, Arctiidae, Phalaenidae; all moths of Pennsylvania.

*Peters, George, Adamstown. RHOP. MACRO. Coll. Ex. Buy. Sell.

Rupprecht, Jerome (Rev.), St. Vincent Archabbey, Latrobe. RHOP. MACRO. Coll. Ex.

*Sweadner, Walter R. (Dr.), Curator of Insects, Carnegie Museum, Pittsburgh 13. RHOP: Parnassius, esp. of Central Asia. MACRO: esp. Sphingidae. Hybridization and Evolution of species. Museum Coll. Ex. Buy.

*Tietz, Harrison M. (Prof.), Dept. of Zoology, Pennsylvania State College, State College. RHOP. MACRO: esp. Phalaenidae. Food Plants, Morphology. Coll. Ex.

PUERTO RICO

Ramos, J.A., Biology Dept., College of Agriculture and Mechanic Arts, Mayaguez. RHOP: esp. Neotropical. MACRO: West Indian. Systematics, Distribution. Coll. Ex.

RHODE ISLAND

French, Ellery W., (changed address, see page 12)

*Keith, Edward D., 200 Sackett St., Providence. RHOP. MACRO: esp. Plusiinae, Apantesis, Catocala, Papaipema.

SOUTH DAKOTA

HARVEY, BILL B., Box 52, Wall. RHOP. MACRO. Coll. Ex. Buy. Sell.

TEXAS

*Bridwell, L.H., Box 44, Forestburg. RHOP: esp. Incisalia. MACRO: esp. Catocala. Ex. Buy. Sell.

*BRUMBAUGH, JOHN M., 611 W. Hull St., Denison. RHOP. MACRO. Coll. Ex.

*Freeman, Hugh A., Box 292, Pharr. RHOP: esp. Hesperioidea, Theclinae. Distribution, Ecology, Taxonomy, Mimicry. Coll. Ex. Buy. Sell.

*GLICK, PERRY A., Bureau of Entomology & Plant Quarantine, Box 1218, Waco. RHOP: esp. Papilionidae. MACRO: esp. Catocala, Saturniidae. Aerial Insect Dissemination and Migration, Cotton Insects. Coll. Buy.

Kinch, Everard M., 168 Parkside Drive East, Fort Worth. RHOP: esp. Papilionidae, Morphidae. Coll. Ex.

*Orchard, Charles D., 803 W. Lynwood Ave., San Antonio 1. LEPID. Migration, Ecology. Coll.

*STRUCK, B., P.O. Drawer 271, Brownsville. RHOP. MACRO.

Vernon, John B., P.O. Box 195, Bonham. RHOP: esp. Papilionidae and Pieridae. Foreign correspondence. Coll. Ex. Sell.

*WILSON, KENT H., 430 Ridgewood Road, Fort Worth 7. RHOP: esp. Papilionidae and Megathymidae. MACRO: esp. Saturnioidea, Sphingidae, Catocala. MICRO: Jugatae, Cossoidea, Aegeriidae. Life History, Migration, Genetics, and Chemistry. Coll. Ex. Buy.

UTAH

*Downey, John C., Biology Dept., University of Utah, Salt Lake City 1. RHOP: esp. Lycaenidae. Distribution of Lycaenidae in Utah, esp. Lycaeides. Coll. Ex.

Phillips, W. Levi, 985 S. Third East, Salt Lake City 4. RHOP. MACRO: esp. Pseudohazis.

VIRGINIA

*FRANCLEMONT, JOHN G., 5829 Little Falls Road, Arlington. MACRO: esp. Phalaenidae, Notodontidae, Arctiidae, Lymantriidae. Life History and Distribution. Coll. Ex. Buy.

*Fuller, Stanley V., 719 Park St., Bristol. RHOP. MACRO: esp. Sphingidae, Catocala. Life History. Coll.

Newman, John E., Woodlawn, Carroll County. RHOP. MACRO: esp. Saturniidae. Coll. Ex. Buy. Sell.

*Wood, Carroll E. Jr., 434 High St., Salem. RHOP: esp. eastern U.S.A. Pollination, Food Plants. Coll.

WASHINGTON

*ANDERSON, ANDREW, Pateros. RHOP. MACRO: esp. Pseudohazis, Catocala. Coll. Ex.

*COOK, WILLIAM C., 219 Newell St., Walla Walla. MACRO: esp. Phalaenidae. Distribution. Coll. Ex.

*Frechin, Donald P., 1504 N. Lafayette, Bremerton. LEPID: esp. Nearctic diurnals except Hesperiidae; Papilio machaon complex of world.

*Hopfinger, John C., Brewster. RHOP: esp. Satyridae, Lycaenidae. MACRO: esp. Saturniidae. Migration. Coll. Ex. Buy. Sell.

*Johnston, Edward C., 2268 E. 60th St., Seattle 5. LEPID. Coll. Ex. Sell.

Riesland, LeRoy G., 1111 Warner St., Sedro Woolley. RHOP. MACRO. Life History, Migration. Coll. Ex.

WISCONSIN

*Arnhold, Francis R., Route 3, Chippewa Falls. RHOP. MACRO: esp. Catocala, Sphingidae. Life History. Coll. Ex. Buy.

Euting, Neal A., Rt. 4, Box 11B, Oconomowoc.

*GRIEWISCH, LOUIS W., 114 Gray St., Green Bay. RHOP. MACRO. Coll. Ex. Buy.

Jablonski, Raymond J., 922 E. Knapp St., Milwaukee. (see JAPAN).

*MOECK, ARTHUR H., 301 E. Armour Ave., Milwaukee 7. RHOP. Coll. Ex. Buy.

*Renk, John J. (Brother), Marquette University, 1131 W. Wisconsin Ave., Milwaukee 3. RHOP: esp. exotic Papilionidae, Agrias, etc. Coloration. Coll. Ex. Buy.

*SIEKER, WILLIAM E., 119 Monona Ave., Madison 3. MACRO: Sphingidae, esp. Sphinx, Saturniidae, Catocala, Citheroniidae. Coll. Ex. Buy. Sell.

*Stauffacher, Mrs. Emil W., 2208 12th St., Monroe. RHOP. MACRO. Life History of Saturniidae. Coll. Ex. Buy. Sell.

*ZIEMER, SYLVESTER E., 715 Dorelle St., Kewaunee. RHOP. MACRO: esp. Saturniidae, Sphingidae. Coll. Ex. Buy. Sell.

WYOMING

*Glasgow, Clyde L., P.O. Box 24, Daniel. LEPID. Coll. Ex. Sell.

VENEZUELA

LICHY, RENÉ, Parque Sanabria 5, Caracas. RHOP: Venezuelan only. Euchromiidae, and world Sphingidae. Ecology and Life History. Coll. Ex. Buy. Sell.

TOO LATE FOR CLASSIFIED INCLUSION

*AVINOFF, A., 952 Fifth Ave., New York 21,N.Y. LEPID: Jamaican; Parnassius, Satyrus of Palaearctic region.

Berjot, Etienne E., 1 rue du Plessis-Pommeraye, Creil (Oise), FRANCE. RHOP. MACRO. Life History. Coll. Ex.

Bird, Charles D., 1930 Rosser Ave., Brandon, Manitoba, CANADA.

*Bruggemann, Paul F., R.R. 1, Furness, Saskatchewan, CANADA. MACRO: Geometridae. MICRO: Hepialidae. Life History, Ecology. Coll. Ex. Buy. Sell.

Cordingly, George A., 9966 Sunset Blvd., Beverly Hills, Calif. RHOP. & MACRO: of Cal., esp. Zerene, cecropia. Coll. Ex. Buy.

Downey, Duke, 51 West 4th, Sheridan, Wyoming.

Eisner, Thomas, 45 Lynwood Road, Scarsdale, N.Y. RHOP: Riodinidae. Coll. Ex.

Fleming, Henry, Box 338, Coytesville, N.J.

Hards, Charles H., 40 Riverdale Rd., Plumstead, London S.E. 18, ENGLAND. RHOP. & MACRO: England & Nearctic, esp. Catocala and Saturniidae. Life History, Migration, Distribution, Variation. Coll. Ex.

KING, EDWARD J., 2211 W. Fourth St., Duluth 6, Minn. LEPID. of world. Coll.Ex.Buy.Sell.

Lewallen, Lawrence L., 346 So. 20th St., San Jose 12, Calif.

Mueller, Joseph, 610 Springfield Ave., Newark 3, N.J. LEPID: New Jersey. Life History. Coll.

Roepke, W. (Prof. Dr.), Laboratorium voor Entomologie, Berg 37, Wageningen, NETHERLANDS. RHOP. & MACRO: Palaearctic & Indo-Malayan. Life History, Ecology, Genetics, Morphology, Histology, Zoogeography, Systematics.

SMITH, EDGAR A., P.O. Box 733, Los Banos, Calif. LEPID. Life History Photography, Literature. Coll. Ex. Buy. Sell.

Standard, O.D., 322 E. Coronado, Belen, New Mexico. Coll.

*Travassos Filho, L. (Dr.), Dept. de Zoologia, Caixa Postal 172-A, São Paulo, Brazil. MACRO: Ctenuchidae, Pericopidae, Castniidae. Life History, Field Technique. Coll. Ex.

Unseld, James, Jr., Gravel Switch, Kentucky.

LATE CHANGES OF ADDRESS:

French, Ellery W., University of Hawaii, P.O. Box 18, Honolulu 10, T.H. RHOP. MACRO.

*KING, HAROLD L., 4618 Abercorn St., Savannah, Georgia. RHOP. Coll. Ex.

PRESTON, FLOYD W., 2024 8th Ave., Los Angeles 16, Calif. RHOP: esp. Pieris, Anthocharis. Coll. Ex. Buy. Sell.

SUMMARY

TOTAL MEMBERS 347

Sustaining Members- 93
Regular Members- 254

Charter Members- 203
1948 Members- 144

Nations- 28
States in U.S.A. (including D.C., Hawaii, and Puerto Rico)- 38

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TOTAL RECEIVING NEWS 387

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The Lepidopterists' News

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c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON
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THE LEPIDOPTERISTS' SOCIETY: 1948

With the present issue the Lep. News begins its third volume and the Lepidopterists' Society enters a new year. In order to refresh charter members and inform new members on the aspirations and on the progress of the first two years a brief account of Society activities is presented.

The Society was formed and is continuing for the purpose of advancing the knowledge of Lepidoptera by associating lepidopterists of all parts of the world and keeping them aware of each other's activities by means of a small, informal periodical. Some members are trained professional zoologists; many are well-informed amateurs interested in serious research; most are amateurs with varying degrees of background who enjoy a lively interest in Lepidoptera but do not care to publish papers on special research. The problem of cutting across such a diversity of interests is difficult and has not yet been solved to our satisfaction.

While the total membership has been nearly doubled during the past year, the most significant development has been the extension of membership outside of North America. The total number of these members has risen from 12 to 88 and the total number of nations from 9 to 30. Much of this international development has been subsidized by gifts of Society memberships from American members to lepidopterists in "soft currency" countries, and there is every reason to believe that these members will wish to continue their membership when the dollar balance has been restored.

Thus far the time has not seemed propitious for forming the Society into an organization having elected officers and meetings, but this development is kept constantly in view. Constructive ideas for the best steps in this direction are invited.

Much of the material in the Lep. News has been planned specifically for News readers, and there are several series of related articles. Prof. Forbes' "Questions and Answers" column has become an established feature of the News. The series of brief biographies has continued with its original purpose of acquainting lepidopterists with the history of their science; biographies of great European workers are planned for this year. A series of discussions on an elementary level of procedures and techniques of taxonomy has been presented and will be continued in response to many requests for such introductory discussions. The section giving abstracts and comments on current papers relating to Lepidoptera from the world literature has been continued and much improved by the addition of several cooperating abstractors; eventually we hope that every country will have one or more members abstracting its literature and that world coverage will be virtually complete. The series of reviews of important books on Lepidoptera is continuing. At our request, papers have been written by members to give accounts of Lepidoptera collecting in various parts of the world, in 1948 the Arctic, Hungary, Jamaica, and the Rocky Mts.; Dr. Wilcke's article in the current issue continues the series. The first article has appeared in what is planned to be a long series of summaries of the important Lepidoptera collections around the world. Several articles on nomenclature were given and are followed by Munroe's discussion in the present issue. There were numerous field notes and technique suggestions, and we continue to solicit significant notes of this sort. The series of reports on war losses of lepidopterology is nearly complete. The "Notices by Members" page was very active.

The 1948 Field Season Summary for North America will be issued soon as a supplement to Volume II.

The annual List of Members provided a directory of names, addresses, and special interests of all members. The 1949 list will appear in the fall.

The Society's Board of Specialists is a permanent establishment. Its present composition will be found on page 2 of this issue.

As in the past, no new taxonomic material (new species, new descriptions, etc.) will be accepted. It is felt that these should go to the multitude of research periodicals. Usually only solicited articles are desired for the Lep. News; it is intended that these be chiefly of a review nature.

Volume 3 will be issued monthly, but will again be discontinued during July, August, and September.

An important incipient Society project, "The Butterflies North of Mexico", was outlined by F.M.Brown, its Coordinating Editor. It is planned as an exhaustive treatment in several volumes of the systematics and biology of North American Rhopalocera.

Subscribers to the Lep. News (including all members) are guaranteed the delivery of every issue. Please check your file of the News to be sure you received the nine issues of Vol. 2. We will forward, at no cost, all numbers not received if you request them before 1 May 1949.

An aspect of Lepidoptera biology of prime importance for knowledge of taxonomy, phylogeny, ecology, and genetics, as well as for economic studies, is the exact identification of host plants on which the larvae feed. Accurate identifications are the only useful ones. Consequently arrangements have been made to provide host plant identifications for all North American workers. Probably members in other parts of the world will find botanists of their nations equally cooperative. North American plants will be identified as follows:

GRASSES ..... John R. Reeder
Osborn Botanical Lab.
Yale University
New Haven 11, Conn.

OTHER PLANTS ..... Ivan M. Johnston
Arnold Arboretum
Jamaica Plain 30, Mass.

Dr. Reeder is a leading authority on grasses. Professor Johnston is not only an outstanding plant taxonomist, but also an enthusiastic lepidopterist. Please write them before sending material and please mention your Lepidopterists' Society membership.

In order to insure ready identification it is essential in collecting the plants to take the following steps:

1.) Preserve the specimen carefully. Flatten and dry it simultaneously either in a standard botanical press or between sheets of newspaper placed in a large book weighted by any heavy weight. Press it for at least one week. The plant may be mailed in folded newspaper, with the package braced against bending by strong cardboard backing on both sides.

2.) Preserve as many parts as possible. Leaves attached to a stalk or twig and the flower are essential for most plant species. The fruit is always helpful, and in grasses the seeding stalk is necessary. If it is small enough, press the whole plant.

3.) Include complete data: locality, date of collection, habitat, and altitude if in mountains.

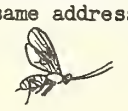
IDENTIFICATION OF PARASITES

We will be glad to publish in the Lep. News records of all accurately identified parasites whose host is known. Be sure to save carefully all parasites you rear. The following authorities have kindly agreed to identify parasites. We do not yet have a determiner for the minute Chalcid wasps, but these should be saved. (See Lep. News, vol.2: p.53 for descriptions and illustrations.)

ICHNEUMON WASPS (Ichneumonidae) ..... H.K. Townes
North Carolina State College
Raleigh, N.C.

BRACONID WASPS (Braconidae) .... C.F.W. Muesebeck
Div. of Insect Identification
Bureau of Entomology & Pl. Quar.
Washington 25, D.C.

PARASITIC FLIES (Larvaevoridae) ... C.W. Sabrosky
(same address as Mr. Muesebeck)



The purpose of the Board is to strive toward a high standard of accuracy in published check-lists, life histories, etc. by providing authoritative identifications of specimens forming the basis of these published papers. The following rules concerning the service were formulated by the Board:

1. No specimens may be sent until the specialist has replied in writing that he is ready to receive them.
2. No specimens will be accepted unless full data (not key numbers) are on each specimen.
3. A series of each species must be spread, mounted on pins; the others may be in papers.
4. Wherever possible, at least 3 prs. should be sent for determination.
5. The specialist may, if he chooses, retain one-half of the first 8 specimens of each species, but not uniques unless by agreement.
6. Return postage should be provided.
7. Specimens must be carefully packed.

NORTH AMERICA:

Pieridae & Boloria ("Brenthis") ..... A.B. Klots
Dept. of Biology,
College of City of N.Y.
New York 10, N.Y.

Satyridae ..... C.F. dos Passos
Washington Corners, Mendham, N.J.

Speyeria ("Argynnis") ..... L.P. Grey
Lincoln, Maine

Theclinae (Hairstreaks & allies) .... H.K. Clench
1270 Sudbury,
Willow Run Village, Mich.

Plebejinae (Blues) ..... V. Nabokov
Cornell University, Ithaca, N.Y.

Hesperiidae (Skippers) ..... A.W. Lindsey
Denison University, Granville, Ohio

Phalaenidae & Notodontidae ..... J.G. Franclemont
5829 Little Falls Rd., Arlington, Va.

Catocalinae & Aegeriidae ..... A.E. Brower
5 Hospital St.,
Augusta, Maine

CENTRAL & SOUTH AMERICA:

Hesperiidae ..... E.L. Bell
150-17 Roosevelt Ave.,
Flushing L.I., N.Y.

WEST INDIES:

Hesperiidae ..... E.L. Bell

All other Rhopalocera ..... Eugene Munroe
Institute of Parasitology
Macdonald College, P.Q., Canada

AFRICA:

Lycaenidae ..... H. Stempffer
Lab. d'Entomologie du Museum
45 bis, rue de Buffon,
Paris (5e), FRANCE

SOME REMARKS ON THE GENUS CONCEPT IN RHOPALOCERA

by Eugene G. Munroe
Institute of Parasitology
Macdonald College, Quebec, Canada

In the past few years there has been a strong tendency toward the subdivision by revisers of some of the larger of the well known butterfly genera. Conspicuous examples of this trend are the work of Warren and of dos Passos & Grey on the Argynnidini, and Nabokov's study of the Neotropical "Plebeiinae". The first group of workers have divided the fritillaries (in the strictest sense) into twelve genera, with a promise of more to come, while Nabokov has split so homogeneous a group as the "Blues" into five subfamilies, each presumably breaking down into a number of genera.

While not wishing to pose as an extreme "lumper", I cannot bring myself to agree with these innovations. The size of genera is of course to some extent a matter of taste, and, confronted by the same taxonomic situation, two workers may quite legitimately differ as to the number of genera necessary for its clear interpretation. Within the limits imposed on the one hand by the more or less definite species concept and on the other by the necessity for fitting his arrangement into the general scheme of zoological classification, the choice made by each worker will depend on his appraisal of three governing factors: first, the equivalence of the diagnostic characters used with those which define genera in other related groups; second, the usefulness of the genera adopted in outling the internal relationships of the group; and, third, the usefulness of the genera adopted in outlining the internal relationships of the group; and, third, the scription and discussion. Thus, although I agree with the authors I have mentioned in their interpretation of relationships, and consider their work admirable from a purely systematic standpoint, I differ entirely in my evaluation of the factors governing generic size, and consequently take issue with their representation of the admitted relationships in terms of genera.

Let us consider first the Argynnis complex. Here the situation is fairly clear: there are two principal groups, which are, roughly speaking, the large fritillaries and the small fritillaries, although a few of the smaller species, including the type of Brenthis,* belong to the large fritillary group. The large fritillaries are predominantly North Temperate, with minor extensions into the montane and temperate regions of the Southern Hemisphere, and with one tropical species. The small fritillaries are predominantly Arctic and montane, with a minority of species in the North Temperate zone in each hemisphere. The two groups are separated by clear-cut genitalic differences. Within each group, and particularly within the large fritillaries, there is considerable variety, but the general facies is remarkably constant, and childrenae and the American group, near the extremes of variation within the large fritillaries, are connected by a fairly good chain of intermediates: paphia, laodice, adippe, niobe, and aglaia, to name a few. While genitalic differences within the two groups are perfectly obvious, Warren's implication that they are so large and striking as to compel the recognition of numerous genera seems to me to be a gross exaggeration. Warren's eye was perhaps somewhat sharpened by his previous experience with Erebia, an exceptionally uniform genus even for the Satyrinae, a group in which, as a whole, genitalic differences are remarkably small. To me the genitalia within each group seem very homogeneous, differing only in minor characters of form and proportion; the differences are not at all comparable to those found within such groups as Nymphalis, Junonia, Anaea, Calisto, or Phoebis, to mention a few with which I am familiar. A group so uniform in ecology and general facies as Parnassius shows larger differences than the "tribes" adopted by dos Passos & Grey, while in the Hesperiidae species hardly distinguishable superficially, and congeneric on any interpretation, may show the most conspicuous genitalic contrasts, as in Ephyriades and Achylodes. A classification of the Papilioninae in which such minor characters were given weight would require literally dozens of genera, and such homogeneous entities as the thoas group would have to be split. In the aristolochiae group of "Polydorus", a large part of the normal structure of the genitalia, including the main body of the valve and the outer tube of the aedoeagus, is wholly aborted, and the claspers are greatly hypertrophied in compensation, yet there are grave objections to the generic separation of this group from the allied nox and latreillei groups, in which the same parts are entirely normal.

It is clear that the differences on the basis of which the division of the fritillaries has been proposed are not nearly as large as those which characterize many of our commonly accepted genera. However, two lines of argument are left open to supporters of the division. They may say that Rhopalocerous genera are in general too large, and that many of the more important ones need splitting; or they may say that the fritillaries represent a special case in which excessive splitting can be justified on the ground of expediency. The first argument almost answers itself. Using these characters we multiply the number of genera of fritillaries by at least six. This is likely to be a very conservative estimate of the proportional increase if the system is extended to the Rhopalocera as a whole, for the fritillaries are one of the best known groups. If we go on to the moths, we shall require twenty to fifty thousand genera, and the system becomes cumbersome beyond belief. The only argument that I can see in favour of the procedure is that it would bring our classification more into line with that of the higher vertebrates, in which orders are about equivalent to our families, and families to our genera; in that group the situation is rendered tolerable by the enormously disproportionate development of one of the subphyla, and the relatively small overall number of species.

* Brenthis is actually transitional to the small fritillaries in several respects.

The second argument is in my opinion legitimate in form, but I think that it has no validity in the present case. It is obviously desirable to divide large, heterogeneous groups, such as the Swallowtails or "Blues", in which structural characters are slight or inconstant, on much finer criteria than need by employed in groups which are very uniform in appearance and ecology (e.g., Parnassius), or which present striking and trenchant morphological characters (e.g., the Erycinidae). Structural characters in the Argynnis group are certainly slight, but the group can hardly be considered as conspicuously heterogeneous. On the contrary, striking similarities in appearance, life history, and habits extend throughout it and into the neighbouring Phalantine genera, and even in some degree to the related Dione, Heliconius, and Acraea complexes. The only forms which are really divergent in appearance are the females of a few species of large fritillaries, and in each of these cases there is a definite possibility of mimetic modification. The cleavage in structure and pattern between the large and small fritillaries, supported as it is by a corresponding cleavage in distribution and habits: temperate-subtropical vs. arctic-subarctic, single brooded vs. (frequently) multiple brooded, etc., is certainly significant, and represents a division which is not only of major importance to the specialist but also of practical value to the general student. For groups of this scope I would without hesitation recognize genera, viz.: Argynnis and Boloria. The finer nuances of relationship, however interesting and suggestive though they may be, could receive quite adequate treatment in the entirely conventional terms of subgenera, sections, and species groups. I might, I must confess, be tempted to separate as a third and monotypic genus the one ecologically tropical species, hyperbius, which differs markedly from the other large fritillaries in general facies. To split apart, however, such really close species as paphia, pandora, and childrenae, aglaia and eurynome, or myrina and aphirape is a very different thing, and can lead only to disregard of our efforts by all but butterfuly specialists.

Intrinsic evidence of over-splitting is in fact presented in the classification outlined by Grey in Lep. News 2: 46; for Grey's subfamily Argynninae must be equated with a tribe in Clark's classification of the Rhopalocera, which is summarized in Lep. News 2: 73. When it is noted that an extra category, the "group", has had to be introduced into Clark's scheme in order to avoid raising the Papilionoidea to subordinal rank, the discrepancy between the restricted Argynnidine genera and the ordinary zoological values can be very clearly seen. This is a pale shadow, however, of the colossal disproportion which appears in Nabokov's classification of the "Blues", to which we may now briefly refer. Here we find that five subfamilies are recognized in a group that Clark lists as a SUBTRIBE! If the proper heirarchy is to be followed, this subtribe becomes a family, and the group Lycaenae becomes an order. I do not for a moment imagine that Professor Nabokov would actually follow this course, but suppose rather that he would interpolate supplementary categories between the subfamily and the family levels. Why not, however, interpolate such categories between the genus and the species? Thus at one stroke a multiplicity of induplicable generic names could be avoided, and the genus retained as an entity intelligible to the general entomologist. Taxonomic clarity would in no way be sacrificed, and simplicity would be definitely furthered.

Having reached the end of this perhaps somewhat tendencious discussion, I should repeat that I wish in no way to criticize the taxonomic judgment or findings of the authors whose work I have cited. For these I have the highest respect: I differ only on a question of nomenclatorial practice. I have selected these particular revisions less as specific targets than as widely read examples of an increasingly prevalent tendency, which I regard as regrettable. I hope, therefore, that if some of my remarks have been a little too heavily barbed, they will nonetheless be forgiven, as having been made in a constructive, rather than a destructive, intent.

REFERENCES

Clark, A.H. 1948. "Classification of the butterflies, with the allocation of the genera occurring in North America north of Mexico." Proc. Biol. Soc. Wash., vol.61: pp.77-81.

dos Passos, C.F., & L.P. Grey. 1945. "A genitalic survey of Argynninae." Am. Mus. Nov., no.1296: pp.1-29.

Nabokov, V. 1945. "Notes on Neotropical Plebejinae." Psyche, vol.52: pp.1-61.

Warren, B.C.S. 1944. "Review of the classification of the Argynnidi: with a systematic revision of the genus Boloria." Trans. Roy. Ent. Soc. Lond., vol. 94: pp.1-101.

REPORT ON WAR DAMAGE IN EUROPE- IV. POLAND

by S.G. Kiriakoff
Ghent, Belgium

There unquestionably has been much damage to lepidopterology in the eastern European countries. Unfortunately, there is not much hope of obtaining extensive and precise information on that subject for various reasons. So I feel very glad to be able to give the readers of the Lep. News a few data regarding Poland, which have been kindly sent by Dr. S. Adamczewski of the Warsaw Zoological Museum.

The Polish lepidopterists deceased or killed during the war are: Dr. Jerzy Kremky, keeper of Lepidopterology in the Warsaw Museum; Mr. Marjan Maslowski of the same institution; Ledwig Maslowski, M.Sc., brother of the scientist just named; Zawercie, Silesia; Mr. Jan Romaniszyn, Cracow; Zdzislaw Stuglik, keeper of Zoology, Silesian Museum, Katovice.

The Polish collections of Lepidoptera destroyed are: that of the Warsaw Zoological Museum, burnt on November 1, 1944, and which contained about 500,000 specimens; those of several Warsaw lepidopterists: S. Teplicki, J. Klenner, M. Hajkowicz, C. Nieniewski and others. As is known, the city of Warsaw has suffered probably more than any other during the war.

BOOK REVIEWS

10. "The Lepidoptera of New York and Neighboring States, Part II, Geometridae, Sphingidae, Notodontidae and Lymantriidae" by William T.M. Forbes[1]

"The Lepidoptera of New York and Neighboring States" is a work, which when completed, will treat all the species of Lepidoptera occurring in Northeastern North America. The area covered is roughly outlined as follows: the boundary on the east is the Atlantic Ocean, on the south it is the southern boundaries of the states of Virginia and Kentucky, on the west it is the Mississippi River and a line drawn northward from its headwaters, and on the north the boundary is vague, but usually includes the Arctic regions. Part I of this work was issued in 1923; it covers all the "Micro" families and the so-called Primitive and Specialized Bombyces, this last a heterogeneous assemblage of not too closely related families. (See review in Lep. News 1: p.63.)

After an interlude of a quarter of a century, the much awaited and promised Part II appeared in August 1948. This part will have an instant appeal because it treats families of moths with which most collectors are familiar, and about which they have often expressed the wish, that there were some work to help the serious student identify his material. The manual is preëminently written for this purpose, and it succeeds most admirably in accomplishing it. The make-up follows the same format as Part I. The keys are as simple as the circumstances will permit. There are more illustrations of genitalia; this is necessary because we are dealing with groups where some of the close species can only be identified with certainty by the genitalia.

The Geometridae are handled in a very praiseworthy fashion, and all stages are used in the system of classification employed. We have in this group a more modern view than any which has been presented thus far. The Sphingidae follow the Classical treatment of Rothschild & Jordan. The Notodontidae have undergone some revision, all of which contributes to a better understanding of the family. The Lymantriidae are treated in the conventional manner, and are still much in need of revisional studies.

While Dr. Forbes makes some exceptions for his nomenclatorial usage, it is on the whole correct. I should, however, like to bring out some points wherein I disagree with him.

Lycia Hübner [1825] (page 65) is given precedence over Biston Leach 1815, though the tribe is called Bistonini. The placing of cognataria Gn. with the remainder of the species, as Dr. Forbes does, is essentially incorrect; there exist tangible differences in the larvae and adults of both these groups, and these are too basic to permit this association to endure. Biston (with type prodromaria Schiff.) should be for cognataria and its Eurasian allies (Amphidasis Treitschke 1825 - isogenotypic synonym); Lycia (type, hirtaria Linn., a species very close to ursaria) may be used for the remaining species so grouped by Dr. Forbes. Harrison, who has done considerable work on the group, divides it further.

Cabera Treitschke 1825 (page 71) is used instead of Deilinea Hübner [1825]; for the latter name one has Hemming's deductions that signature 20 of the "Verzeichniss bekannter Schmettlinge" appeared between January and September 1825; the former name appeared in part ii of volume 5 of the "Schmetterlinge von Europas". Part ii of volume 5 is reviewed in "Isis von Oken", xix, 1064, 1826, and part i is reviewed in "Isis von Oken", xviii, 53, 1826. I have not been able to determine whether the signature of the "Verzeichniss" containing Deilinea was issued first or Treitschke's work containing Cabera. In this case I am inclined to follow Dr. Forbes' usage of Cabera, though McDunnough may be right in using Deilinea.

Lithina Hübner [1825] (page 88) is not correctly applied; Lozogramma Stephens 1831 should have been used. The latter name was proposed for the single species petraria Hbn. (very close to subaequaria), while Lithina was proposed with two included species, avenacearia Schiff. and petraria Hbn.; Prout in 1901 chose avenacearia Schiff. as the type of Lithina and thus preserved the traditional usage of Lozogramma. The tribal name Lithinini will have to be changed to Lozogrammini as Lithina falls in the Itame-complex.

The use of the name Therina Hübner, [1832][2] (p.100) for American species is without any nomenclatorial basis. When the name was proposed, the names of two species were included, fasciaria Linn. and perfidaria Hbn.; this last, a nomen nudum, was never connected with any description or figure, thus the genus is virtually monobasic and a synonym of Ellopia Treitschke. If all the species listed by Dr. Forbes are to be placed in one genus, then the name used should be Lambdina Capps. I, however, prefer to adhere to Mr. Capps' divisions of the American species in this group.

With reference to Sabulodes Guenée (page 108), I do not think this all-inclusive use should be advocated. The use of Antepione for arcasaria and Prochoerodes for transversata should be adopted, as McDunnough has done in his Check List. There are too many discrepancies between these concepts to unite all under one name.

Hemitheinae (page 110) should be suppressed in favor of Geometrinae; the type of Geometra was designated by Duponchel in 1829 as papilionaria Linn.

Haemorrhagia Grote & Robinson 1865 (page 195) with type thysbe Fab. should be suppressed in favor of the older name Hemaris Dalman 1817 with type fuciformis Linn.

Oligocentria delicata Dyar (page 226) is not a race of lignicolor Walker, but a distinct species; it is browner and if anything slightly larger, not smaller, than the average lignicolor.

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[1] Pp. 263, 255 text figs. 1948. Cornell University Agricultural Experiment Station Memoir 274.

[2] Therina Hbn. is used in the "Zutr. z. Samml. Exot. Schmett." III, 8, 1825 for the new species fervidaria Hbn. and fasciaria Linn., but this is later than the usage in the "Verz. bek. Schmett." 283, [1823].

The names used in the Lymantriidae (pages 239-245) call for the most comment. The argument over Euproctis Hbn. [1819], Porthesia Stephens 1829 and Nymgia Hübner [1820] centers around the moot question of misidentified types of genera. I believe in accepting as the type of a genus what the author said he had; Dr. McDunnough in his Check List has done this, though in The Canadian Entomologist, volume 53, page 45, 1942, he severely criticised my stand on this question. I would use the names Euproctis and Nymgia as in the Check List. I cannot agree with the use of Lymantria Hübner 1819 (with type dispar Linn.). The differences between the two species of Byrdia Schaus 1927 (type rossii Curtis) and the type of Gynaephora Hübner 1819 (selenitica Esp.) are of a very minor nature; in fact fascellina Linn., the type of Dicallomera Butler 1881, is also extremely close, all these species forming a very compact group. I do not consider pudibunda Linn., the type of Dasychira Hübner 1806, and tephra Hbn. the type of Dasychira Hübner [1809], congeneric. With the 97th Opinion of the International Commission on Zoological Nomenclature in effect, the name Dasychira Hübner [1809] would be applicable to our species, if tephra Hbn. could be satisfactorily determined. Parorgyia Packard 1864, the traditional name for our species, should be used. The East Indian Olene mendosa Hbn. is related to our species, but the differences which exist preclude the inclusion of our species in a genus with that species. In this genus, Dasychira (or better Parorgyia), the specific names employed call for comment also. The study I have made of the group leads me to believe that the correct application of names for this work should be as follows:

Species 1. achatina J.E. Smith
meridionalis Barnes & McDunnough
race basiflava Packard

Specimens of both races come with and without the black basal dash.

Species 2. vagans Barnes & McDunnough

Species 3. dorsipennata Barnes & McDunnough

As Dr. Forbes says, this is the species most like Hübner's figure of tephra, but the locality is wrong!

Species 4. leucophaea J.E. Smith

Species 5. cinnamomea Grote & Robinson
race aridensis Benjamin

Species 6. obliquata Grote & Robinson
=atomaria Walker 1856 nec. 1855
form parallela Grote & Robinson
form atrivenosa Palm

The correct name for this species is obliquata Grote & Robinson, as Dasychira atomaria Walker 1856 ("List Specimens Lepid. Ins. Brit. Mus.", vii, p.1739) is a homonym of Dasychira atomaria Walker 1855 ("List Specimens Lepid. Ins. Brit. Mus.", iv, p.866). The type female of atomaria Walker 1856 is damaged and poorly spread, and thus gives an erroneous impression of the species, but it is referable to obliquata.

Species 7. plagiata Walker
pini Dyar
pinicola Dyar
race manto Strecker
form montana Beutenmueller

The oldest name in this complex is plagiata Walker, and pini Dyar and pinicola Dyar are synonyms; manto Strecker may be held as a weak southern race, of which montana is the melanistic form.

Notolophus Germar 1812 should be suppressed in favor of Orgyia Ochsenheimer 1810; both names have the same genus type, Phalaena Bombyx antiqua Linn. The question of whether to treat the species commonly listed under Hemerocampa as a distinct genus or not is a matter of personal preference; differences exist, but they are slight.

The biological notes given in this work will be of the greatest assistance to those collectors who have some interest in rearing moths. I have studied them carefully, and I have found a few notes which are at variance with what Laurence Rupert and I have found in our experiences in rearing the species noted. While Campea perlata has two broods a year, the first is from larvae which feed to maturity more rapidly, grow less, pupate the same year as that in which the eggs were laid and produce smaller moths. Lozogramma (Lithina) subaequaria is restricted to bracken (Pteris aquilina). Abbottana clemataria does not hibernate in the egg stage, but in the pupal stage; the moth emerges early in the spring. The second brood in the southern part of its range is smaller and darker.

I suspect that rearing will prove that Pero barnesi and Pero marmorata are the spring and summer broods respectively of one species. Any June records for marmorata are undoubtedly referable to morrisonarius. Here at Arlington, barnesi flies with the first brood of honestarius and marmorata with the second brood. This same condition holds true at Ithaca, New York.

While the criticisms I list may seem lengthy, this is a work of over 250 pages, and I checked it through rather carefully. I cannot see how any collector or working lepidopterist can afford to be without the work; it is the only handbook of its kind in America, and I am sure that most other field entomologists, no matter what their field of interest may be, will want to have a copy for ready reference.

There is no free distribution of the work, but it may be purchased by sending the sum of one dollar and fifty cents ($1.50) to: The Mailing Room, Roberts Hall, New York State College of Agriculture, Ithaca New York. The supply of Part I is exhausted.

Dr. Forbes is at present working upon Part III, which will cover the large family Noctuidae. Part IV will cover the families Arctiidae, Euchromiidae, and Nolidae in the moths as well as all the families of the Rhopalocera.

John G. Franclemont
Arlington, Virginia

A SEASON OF LEPIDOPTERA COLLECTING IN THE AUSTRIAN TYROL

by Dr. Hermann Wilcke
Kössen, Tyrol, Austria

When the snow first melted in the alpine regions Biston isabellae Wheel. was beginning to fly. It lives in the extensive larch-tree woods of the Wipp valley between the Brennerpass and Innsbruck. The males of this interesting species are to be found a little earlier than the apterous females. These wingless ones rest hidden in the bark of larches and are not easily discovered. B. isabellae lives exclusively in larch-tree woods at about 900-1100 meters above sea level. The flying time of the hibernated Cidaria miata L., C. siterata Hufn., Lobophora polycommata Hb., L. carpinata Bkh. and L. sexasilata Hb. did not begin until some time later. These Geometrid moths are to be caught only at light. They fly at an altitude of 600 meters a.s.l., (as in Kössen, for instance) preceding Phigalia pedaria F. or Anisopteryx aescularia Schiff., the earliest moths of the plains. Also Hibernia marginaria Bkh., deeper colored here than in the plains, appears later and was this year extraordinarily rare in consequence of the great drought of 1947.

In the first days of April the invasion of the different species of Taeniocampa began, such as T. gothica L., stabilis View., gracilis F., munda Esp., the rare miniosa F. and the very variably coloured incerta Hufn. The great dark-splashed males of Biston stratarius Hufn., sometimes almost black, and the males of B. hirtarius Cl., resembling Phigalia pedaria F., came to my 1500 kilowatt lamp in numbers some evenings. You can catch the females of these Geometrids only in alder woods, where they are sitting on the trees.

In the middle of April I got 2 specimens of the very rare Notodonta phoebe Sieb. and Odontosia carmelita Esp. and, 2 evenings later, 2 males of the Saturniid Endromis versicolora L. In Tyrol E. versicolora flies regularly by day in alder woods and comes to the light only when disturbed in the evening wind. It is interesting that here the caterpillars of versicolora feed only on alder, instead of on birch as in the plains regions.

The first Rhopalocera are Anthocharis cardamines L. with the orange-yellow apical patch on the forewings, Leptidia sinapis L., a fragile Pierid, and Pieris napi L. All these butterflies are fresh, but Gonepteryx rhamni L., Aglais urticae, Nymphalis io L., and N. polychloros L. are very damaged after hibernation. They all suck greedily on flowers of Heath (Erica). You will also find the Clear-wing Sphingids Hemaris fuciformis L. and, a little later, Hemaris scabiosae Z., when they are feeding at flowers of Primula. In the beech woods the swift Saturniid Aglia tau L. is flying, and less commonly Saturnia pavonia. Among alder woods will be Brephos parthenias L., but very rarely Brephos puella.

At the end of April Agrotis cinerea Hb., plecta L., exclamationis L., and the first Dianthoecia species were beginning to fly, besides the Drepanids Drepana falcataria L. and D. cultraria F. Now and then I found Notodonta trepida Esp., N. ziczac L., often N. dromedarius L., Dicranura vinula L., and finally Pterostoma palpina L., outfitted with long palpi. You can sometimes catch D. vinula on the posts of the fences or on wooden bridges near the mountain rivers, whereas Dicranura erminea Esp., having a design like embroidery of laces, and the related Cerura bifida Hb., C. furcula, and C. bicuspis are found only at light. I was able to collect D. erminea for the first time this year in Kössen, where I have been exploring the fauna for four years. But in the other regions of Tyrol D. erminea is also caught only rarely. The great number of Geometrids appearing included Cidaria variata Schiff., suffumata Hb., nigrofasciata Goeze, capitata Hb., berberata Schiff., the beautiful badiata Hb., autumnalis Ström, Eucosmia certata Hb., Selenia tetralunaria Hufn., Bapta bimaculata Esp., living in beech woods, Deilinia pusaria L., D. exanthemata Sc., Eupithecia oblongata Thnbg. and Chloroclystis rectangulata L.

The first males of Parnassius mnemosyne var. hartmanni L. appeared on 12 May, the females 10 days later. This very interesting Parnassius appears in Tyrol only at 3 places, far apart from one another, and none wider than 2000 qm. Like all Parnassius species, P. mnemosyne is protected by the Government. Because of their sailing and slow flying one would not suppose that Parnassius mnemosyne is so difficult to catch. But if mnemosyne realizes that it is being chased and the habitat is on a steep slope, you cannot follow it. There is danger that both P. apollo and P. mnemosyne will be rooted out, especially since the caterpillars, which feed on Sedum, are collected in great quantities, and butterflies are becoming rare in some places.

On the meadows Papilio machaon L., P. podalirius L., and crowds of little Blues, Lysandra bellargus Rott., Polyommatus icarus Rott., arion L., Plebejus argyrognomon Brgstr., and Lycaena hippothoe L. were enjoying themselves at this time. Celastrina argiolus L. flies only in glades 3 m. above the ground. At the same time Melitaea aurinia Rott., athalia Rott., dictynna Esp. and phoebe Knoch were to be observed with Boloria euphrosyne L. on the flowers of Compositae and Scabiosae.

At the end of May I travelled some days to the Northern Chalk Mountains of Innsbruck. There I collected, at an altitude of 2100-2300 m., under stones near the snow banks, Biston alpinus Sulz. and, flying in sunshine, Oreopsyche plumifera O. O. plumifera appears a little earlier than Scioptera schiffermilleri, another uncommon Psychid of the mountains. The Noctuid Anarta melanopa Thnbg. was to be seen in very rapid flight from flower to flower. Only 5 specimens of Biston alpinus, which often passes 3-5 years in the pupa, were noticed this year. However, Anarta melanopa, funebris, and nigrita B., the rare and highly prized Noctuids of the highest regions, were to be caught more often on Silene acaulis and Dryas octopetala. Anarta cordigera Thnbg., with its yellow hind wings, could be seen at lower altitudes on Heath (Erica). On meadows of Erica at a level of 2000 m. I observed the webs of the Lasiocampid Eriogaster lanestris var. arbusculae Frr. with some young

caterpillars, but only twice the males. This moth has a great enemy in the mountain thrushes, which, in the absence of other food at this high altitude and at this time, eat the caterpillars and the females. Thus far I have seen four females of this species which were carried away from me by these birds. At the foot of a steep slope I found the Noctuid Hydrilla gluteosa Tr., which is rarely taken.

In the meantime in Kössen the rare Odezia tibiale Esp. was flying near the woods, and on the meadows Colias hyale L. and C. phicomone L., Noctuids such as Mamestra reticulata, pisi L.,persicariae L. and Cucullia prenanthis Hb., scrophulariae Cap., verbasci L.,Toxocampa craccae F., Thyatira batis L., Habrosyne derasa Hb., and the Cymatophoridae Cymatophora or F., and Polyploca flavicornis L. The very rare P. ridens F. was to be gotten only at light.

In June appeared lone specimens of Stauropus fagi L., Hoplitis milhauseri F., Stilpnotia l-nigrum Hb., Lophopteryx cuculla, Dasychira pudibunda L. and, punctually at 3 o'clock in the morning, Dasychira fascelina L. and Phalaera bucephala L. In the high regions D. fascelina is one of the earliest moths in the evening, but in the plains it does not come to the sheet until after midnight. Also this year I was astonished to see how scarcely the females of this species came to the lamp; with 250 males of D. fascelina I found only one female.

I observed how uncommon this summer were Boloria thore Hb., B. ino Rott., Habrynthis scita Hb., beautiful green-colored Acronicta alni L., Diphtera alpium Osbeck, Acronicta strigosa (I got only 2 specimens), Agrotis candelarum, Dianthoecia filigrana, D. marmorosa and Trachea atriplicis L. You can hardly conclude from this fact that after a dry summer, as in 1947, some species are more frequent than after a humid one.

In the beginning of August I travelled to the Ötztal. It was unfortunate that the first weeks I had bad weather, so I collected chiefly at light. It was on certain nights in Zwieselstein, situated at an altitude of 1400 m. at the fork of the roads to Obergurgl and Vent, very famous tourist centers, that the first rarities of the mountain moths came to the lamp. The evening began with Cidaria aqueata Hb., nobiliaria HS, infidaria Lah., tophaceata Hb., cyanata Hb., Acidalia contiguaria Hb., dimidiata Hufn.,and a little later Cidaria adaequata Bkh., minorata Tr. and nebulata Tr. Soon appeared the first Noctuids: Hadena zeta Tr., H. maillardi Hb., Mamestra glauca Hb., Dianthoecia caesia Bkh. and D. proxima Hb. The blue-green D. caesia and D. proxima you will find by day on stones too. Only at midnight the first Arctia caja L. and the different Arctiids Endrosa auritax Esp., E. irrorella Cl., Diacrisia sannio L. entered the sheet; also Coscinia cribrum L. with her exclusive grey of the forewings, which by day sits sometimes with folded wings on stems of grass and under overhanging stones.

Back in Kössen I had caught the Arctiids Pericallis matronula L., Spilosoma urticae Esp., S. lutea Hufn., S. lubricipeda L. and Phragmatobia fuliginosa L., so I was glad to collect here Arctia flavia Füssl. The fauna of this region is not yet alpine and many species from the plains flew to me from the Inn valley, such as Agrotis prasina F., occulta L. and janthina Esp. At Obergurgl was the first place the alpine moths were encountered. Here I placed my lamp above the village with the direction of the light down valley. The weather was rainy and warm. In a short time the wall of the house beside the sheet was covered with different Gnophos species, especially G. myrtillatus, ambiguatus, dilucidarius Hb., pullatus Tr. and glaucinarius Hb. Also there were Cidaria cognata Thnbg., C. caesiata Lang, with all its variations, and C. montanata Bkh.

The very scarce Leucania andereggi B. and Hydrilla kitti Rbl., discovered only 30 years ago, were attracted by the lamp. I hurried out to slip into the cyanide jar these swift-sailing guests and the clumsy Hadena monoglypha L. before they escaped. Little Mithymna imbecilla F., by day to be noticed on the flowers of Thistle (Carduus), sits in the evening not on the sheet but below in the grass. It slips deeper and deeper if you are trying to bring it into the cyanide jar. Like a bouncing ball Trichiura crataegi var. ariae Hb. were flying outside the collecting sheet, flicking it and finally settling down on it after some minutes. Two beautiful Hadena rubrirena Tr. and some H. gemmea Tr., with their white spots on the black or brown ground, the precious Agrotis wiskotti Stndf. and A. sobrina G., were fascinating and encouraged me a bit, since I had always before seen only the common alpine moths such as Mamestra serena F., M. dentina Esp., Acidalia incanata F., Ortholita bipunctata Schiff.,and Cidaria truncata Bkh.

The first male of Arctia flavia came at 3 o'clock. This Arctiid alights mostly beside the sheet in its shadow in the grass or at the frame of the sheet, so that you may not notice it. Being fully occupied by trying to examine again and again all the specimens of the different Agrotis, hoping to find among them perhaps an Agrotis culminicola Stgr. or A. hyperborea Zett., you can very easily miss the great Arctia flavia and the shadow-preferring species of Amphipyra.

Especially commonly attracted to the sheet were: Agrotis polygona F., A. fimbria with its white venter, now and then A. candelarum Stgr., frequently c-nigrum L., rubi View., speciosa Hb., margaritacea Vill., cuprea Hb., ocellina Hbn. and alpestris B. (both flying on Silene by day too), lucernea L., helvetina B., birivia Hb., decora Hb., simplonia HG. and very frequently grisescens Tr., latens Hb., recussa Hb. and ypsilon Rott. Almost all these species have a grey ground-color like the stones, therefore it is difficult to distinguish them one from the other. Like forms of another world the species of Calophasia, Caloplusia, Phytometra and Plusia, such as variabilis Piller, chryson Esp., bractea F., gutta Gn., pulchrina Hw., jota L., ain Hochw., all rare, flew in and mixed themselves among the Agrotis. Only Plusia gamma L. was appearing too often, but here it is sometimes opalescent brown-colored and you cannot be angry about them any more.

During the daytime I was searching for Arctiids on the mountain-chains nearly to the Karlsruher Hütte at an altitude of 3000 m. One will find first only Erebia, such as manto, pharte, epiphron, melampus, or nerine Frr., then Pieris callidice Esp. restlessly moving their wings in flight along the stony slopes. Further you will find Parnassius phoebe F.,

living in small scattered colonies and, sucking on cushions of Silene acaulis, Plusia hochenwarthi Hochenw. and Anarta melanopa. Also you will observe exceptionally Psodos alticolaria Mn., alpinata Sc., trepidaria Hb. and coracina Esp., quickly scurrying over the screes. As you approach the glaciers, Dasydia tenebraria Esp. are frightened out from among the stones and Gnophos zellerarius Frr., whose females are always sitting not like its brothers under or beside stones, but UPON stones which are covered by another plain stone. These females also do not fly away, if you remove or let down the covering stone. If you keep silent some minutes zellerarius flies away. The males of this species, which are taken more rarely, fly much more quickly and a longer distance, and they sit down among the rocks, where you cannot catch them. The males very rarely come to the light, but never the females.

Having enough of the above Erebia, we tried to get E. lappona Esp. and glacialis Esp., gorge Esp. and pronoe Esp. All these Erebia fly unusually quickly and don't permit the collector to approach near enough so that he can get them when resting. You must catch them during their flight. Even more wary is Oeneis aello Hb.,which rests only on stones and never on flowers and is very difficult to distinguish from the stone color and which escapes at once if it hears the least noise.

Some years ago it was reported in the literature that the Arctiid Orodemnias cervini Bütt. would be found only in Switzerland, near the Gornergrat. But this very interesting species is also indigenous in the highest Ötztal near the South-Tyrol frontier at about 3000 m. They usually live under stones by day and are not very difficult to collect. There you will also see the caterpillars and pupae at almost the same time as the moth. But the area where O. cervini lives includes hardly 2500 qm. and few collectors know it. It is easier to get the other Arctiid of these regions, O. quenselii Payk.,which, like Parasemia plantaginis, flies quickly in the afternoon hours on Erica slopes. But you can see the females of quenselii on stalks of grass in the early morning. In the same habitat the lepidopterist will find the Arctiid Endrosa ramosa F.

In these days in Obergurgl I had good luck with the weather and hence collected Colias palaeno O., Plebejus orbitulus Prun., and Lycaena dorilis var. subalpina Spr. (without the characteristic orange-yellow spots on the underside of the hind wings).

In the beginning of September I travelled in the Stubai valley. This valley does not extend as far to the south as the Ötztal, but shows a very different fauna. Here you can get the beautiful Agrotis fatidica Hb., Leucania vitallina, and the rare Hepialus carna Esp. and H. ganna Hb. The Geometrid moths are the same as in the Ötztal and give no variety. Certain moths, such as Lobophora sabinata Hs., Phibalapteryx calligrapharia HS., Plusia v-argenteum Esp. and Cidaria dolomitana B., are to be caught only in the Ötztal and are scarce even there.

However, the Stubai valley is the locality for Omia cymballaria Hb. and rare species of Caradrina, such as gilva, pulmonaris Hb., respersa Hb., and exigua Hb., coming over often from the Wipp valley.

One night I experienced an invasion of Plusia gamma. We counted 40-50 gamma on each 10 qm. of every part of the lighted sheet. At 3 o'clock I had to stop the lighting, for it was impossible to distinguish any moths in this throng or to take moths in the cyanide jars without great damage. The sheet was governed by gamma and only the Sphingids like Herse convolvuli L., Deilephila gallii Rott., and D. euphorbiae L., or other heavy-bodied moths did not seem to be disturbed, but they soon resembled the Trichoptera(caddis-flies), which have scaleless wings.

Some nights I have lighted about 1500 m. above Innsbruck in the limestone mountains (the Stubai and Ötz valleys are of granite and slate-stone) and collected Agrotis vitta G., multifida Led., musiva Hb., praecox L., forcipula Hb., flammatra F., depuncta L., baja F., Hadena platinea Tr. and the beautiful Xanthia aurago F., citrago L., fulvago L., and gilvago Esp. Just beginning to appear were Polia chi L., Catocala fraxini L., electa Bkh., nupta L., fulminea Scop. Little by little the Geometrids, species of Ennomos and Conistra, heralded the autumn.

In September it was possible to catch this year not uncommonly the splendid Jaspidea celsia L., appearing at the light punctually at 23 o'clock, and the great loam-yellow Calamia lutosa Hb., which was also found on the reed-grass flowers in the evening. For some years we have not had the chance to get them as we did this year. On the meadows some Zygaenids, such as exulans Hochenw., transalpina Esp. and angelicae O., were still flying.

After a change of the weather accompanied by snow at an altitude of 1400 m. the flying-time of Orthosia, Orrhodia, Diloba caeruleocephala L., Dasypolia templi Thnbg., Miselia oxyacanthae L., Brotolomia meticulosa L., Calocampa solidaginis Hb., and Dichonia aprilina L. was beginning. In Tyrol the species of Calocampa, Dasypolia, and Xylina fly more abundantly in the spring after hibernation. Only in a warm late autumn, like 1948, can you observe these species on the bait.

In October/November I was hunting in the high Stubai valley for Poecilocampa populi var. alpina Frey (distinguished from P. populi L. by the white-grey forewings) and for Hibernia fumipennaria M. in larch-tree woods at an altitude of 1100 m. Both species were uncommon, whereas the abundance of Hibernia aurantiaria Esp., Cheimatobia brumata L. and boreata Hb., Cidaria miata juniperata L., and Agrotis saucia Hb. was extraordinary. Ptilophora plumigera L. (with its long-plumed antennae)was present at the same time.

I hardly need to mention that species such as Scoliopteryx libatrix L. and Scopelosoma satellitia L., whose caterpillars eat other larvae, were at the lamp as frequently as Orrhodia vaccinii, Orthosia lota Cl., circellaris Hufn., helvola L., macilenta Hb. and Xylina socia Rott. Altogether it is impossible to name all Lepidoptera observed and caught during the season. I have mentioned only the characteristic and the uncommon ones.

When the first frosty nights arrived and by day the mountains showed their snow-caps, 2 males of the Death's-head Moth (Acherontia atropos L.), the greatest Sphingid of Middle-Europe, appeared at the sheet. Then, some days later, the season was finished.

Under this heading are listed each month recent papers from all the scientific journals which are accessible to us and our cooperating abstractors. It is hoped eventually to make our coverage of the world literature as complete as possible. Members outside North America are urged to send us references of Lepidoptera papers from journals unavailable to us. Papers devoted entirely to economic aspects will be omitted. Reprints are solicited from all publishing members. Abstracts not initialed are by the Lep. News editor. Initials of cooperating abstractors are as follows: (P.B.)- P.F. Bellinger, (A.D.)- A. Diakonoff, (C.dP.)- C.F. dos Passos, (T.S.)- T. Shirōzu.

1. Bracke, Robert, "Quelques aspects de la faune des Lépidoptères du Pays Gaumais." (In French). Biol. Jaarboek, vol.15: pp.144-166,2 figs. 1948. Account of butterflies observed in one season in region of Belgium near Luxembourg. Calendar of flight periods given.
2. Corbet, A. Steven, "Revisional notes on Oriental Lycaenidae: I." Proc. Roy. Ent. Soc. Lond. (B), vol. 17: pp.93-97. 16 August 1948. Notes on a number of species. Describes as new: Arhopala myrtale epibapta (Singapore, Sumatra); A. sintanga (Borneo); Jacoona anasuja nigerrima (Burma); J. gamamaga (Burma); J. hypoleuca birminia (Burma); Chliaria amabilis lisba (Malay Peninsula). Renames the Sumatran race of C. amabilis-- C.a. martini. (P.B.)
3. Corbet, A. Steven, "Revisional notes on Oriental Lycaenidae: II." Proc. Roy. Ent. Soc. Lond.(B), vol. 17: pp.98-102, 1 fig. 16 August 1948. Notes on a number of species; a revision of the parana group of the genus Nacaduba. (P.B.)
4. Harrison, J.W. Heslop, "A new race of Coenonympha pamphilus, L., from the Hebrides." Ent. Rec. & Journ. Var., vol.60: pp.111-112. Nov. 1948. Describes as new C. pamphilus race rhoumensis (Hebrides). No figs., no mention of genitalia. (P.B.)
5. Hinton, H.E., "Sound Production in Lepidopterous Pupae." Entomologist, vol.81: pp.254-269, 8 figs. Nov. 1948. Lists species whose pupae are known to produce sound by knocking against substrate or walls of pupal cell, or by stridulating in various ways. Describes and figures stridulating mechanisms. Discusses possible function of sounds (appears to be defensive). (P.B.)
6. Mukerji, S., & T.V. Venkatraman, "Studies on Epipyrops melanoleuca Fletcher (Lepidoptera: Epipyropidae), an ectoparasite of the sugarcane leaf-hopper, Pyrilla spp., (Homoptera: Fulgoridae)." Proc. Zool. Soc. Bengal, vol.1: pp.91-102, 9 figs. Sept. 1948. Detailed observations on biology. Found that E. melanoleuca feeds on juices of host, not on waxy secretions; that it does not kill host unless host is very young and does not affect fecundity; that it secretes its own waxy fluff, like the host; that it cannot find new host if dislodged or its host dies; that position of parasite is along host abdomen with head fastened near terminalia and anus fastened near host wings; that all stages of host are attacked at random. Describe eggs, larvae, mouthparts, pupa, cocoon, adult; figure all stages and mouthparts and wax glands. Extensive bibliography on Epipyropidae. A valuable paper.
7. Patel, G.A., & A.C. Basu, "Bionomics of Leucinodes orbonalis Guen., (Lepidoptera) and Epilachna spp., (Coleoptera), the important pests of the brinjal, Solanum melongena L. in Bengal." Proc. Zool. Soc. Bengal, vol.1: pp.117-129. Sept. 1948. L. orbonalis is worst pest of brinjal fruits in Bengal, but long, narrow type of fruits less susceptible than spherical type. Life history described.
8. Rindge, Frederick H., "Lepidoptera: Rhopalocera" in "Contributions toward a knowledge of the insect fauna of Lower California." Proc. Calif. Acad. Sci. (Ser.4), vol.24: pp.289-311. 12 Mar. 1948. Lists 81 spp. of butterflies, including 3 Papilio, 21 Pieridae, 1 Danaus, 1 Coenonympha, 13 Nymphalidae, 1 "Libythea", 1 Lymnas, 3 Riodinidae, 16 Lycaenidae, 21 Hesperiidae. The only species known only from L. Calif. is Myscelia streckeri. Only 9 of the 81 are not known from the U.S.A. An interesting record lists Lycaena hermes from Ensenada in May. An example of a well-done regional list.
9. Teale, Edwin Way., "Scourge of the Monarch". Nat. History, vol.57: pp.356-359, ill. Oct. 1948. Parasitism of Danaus plexippus by Achaetoneura archippivora; good photos. (P.B.)
10. Titschack, Erich, & Hans Schmalfuss, "Was befähigt die Kleidermotte Wolle zu verwerten?" (In German). Biochem. Zeitschr., no.318: pp.393-400. 9 June 1948. Wool can be used by clothes moths if the fibers can be grasped by the jaws of the larva or if some other substance is present which apparently makes it available. The nature of the substance is known, but not its exact identity. Lists are given of mixtures which contain this substance (milk, blood, etc.), and of compounds which have been tested which are not the required substance. (P.B.)
11. Travassos, Lauro, "Contribução ao conhecimento dos "Arctiidae". XV. Sobre o gênero "Bertholdia" Schaus, 1896." Rev. Brasil Biol., vol.8: pp.341-360, 16 figs. Oct. 1948. Lists species, with complete synonymy and distribution; for those (5 spp.) of which specimens were available, gives complete redescription, with figs. of male, female, and genitalia. (P.B.)
12. van Son, G., "A New Species of Mylothris Hb. (Lepid., Rhop., Pieridae) from Southern Rhodesia." Entomologist, vol.81: pp.203-204, 1 fig., pl.I: figs.6,7. Sept. 1948. Describes as new M. carcassoni (S. Rhodesia), with photos of type. Type in Transvaal Mus. Valves of M. carcassoni, trimenia, sagala figured.
13. Viette, P., "Sur le genre Depressaria Haworth. (Lépid. Oecophoridae)." (In French). Rev. franç. d'ent., vol.15: pp.19-29, 30 figs. 1948. Characterizes genus. Gives keys to male genitalia of 30 spp., figuring most. Separates Agonopteryx and Depressaria but sinks Schistodepressaria under latter. No biological or distributional notes, no description except genitalia.
14. Viette, P., "Catalogue des Microlépidoptères de Madagascar et des archipels environnants." (In French). Mém. Inst. Scient. Madagascar (A.), vol.1: pp.31-75. 1947. Gives references to species recorded from Madagascar and nearby islands in families as follows: Incurvariidae- 1, Tineidae- 30, Lyonnetiidae- 51, Plutellidae- 4, Epermeniidae-1, Gracilariidae- 7, Coleophoridae- 1, Hyponomeutidae- 3, Ethmiidae- 4, Blastobasidae- 2, Glyphipterygidae- 12, Schreckensteiniidae- 8, Aegeriidae- 6, Copromorphidae- 4, Carposinidae- 2, Xylorictidae- 19, Oecophoridae- 15, Cosmopterygidae- 13, Metachandidae- 50, Gelechiidae- 27, Eucosmidae- 37, Tortricidae- 24, Phaloniidae- 3, Pterophoridae- 9, "Crambidae"- 163.
15. Viette, P., "Répartition géographique et genitalia de Phycodes minor Moore (Lep. Glyphipterygidae)." (In French). Bull. Soc. ent. France, 1948: pp.92-93. 1948. P. minor male and female genitalia described and figured. First record of this Asiatic species from Africa (Ivory Coast) and Mesopotamia. Reared on Ficus.
16. Williams, C.B., "The Rothamsted Light Trap." Proc. Roy. Ent. Soc. London (A), vol.23: pp.80-85, pl.1. 15 Sept. 1948. Describes in detail with drawings and photos this famous and highly successful light trap.

PERSONALIA

ROBERT H. WHITTAKER received his Ph.D. from the University of Illinois in 1948 and is now on the faculty of The State College of Washington, as an instructor in the Department of Zoology.

J.W. TILDEN has received his Ph.D. from Stanford University and is now on the faculty of San Jose State College in California. His doctor's thesis was on the insect fauna of the shrub, Baccharis pilularis, and in the course of his research he recorded the astonishing number of 256 species of insects on the one plant.

Dr. WALFRIED J. REINTHAL, an Estonian who recently emigrated to the U.S.A. from Austria, has accepted an appointment as Assistant Professor in the Department of Zoological Sciences at the University of Oklahoma. Dr. Reinthal's research for many years has centered on ecology and geography of European Lepidoptera. Although he lost his collection in Estonia during the war, he was able to bring 15,000 specimens from Austria.

Dr. T.N. FREEMAN was made Co-Ordinator of the new Northern Insect Survey. In the summer of 1948 he had 8 parties in Arctic and Sub-Arctic Canada. He personally collected in Labrador and Baffin Island. We hope to present in the Lep. News several reports on Lepidoptera studies by the Survey.

FREDERICK H. RINDGE, who is now completing his Ph.D. thesis at the University of California at Berkeley, has been appointed Assistant Curator in charge of Lepidoptera at the American Museum of Natural History in New York. His appointment fills the vacancy left by Dr. C.D. Michener's move to the University of Kansas (see Lep.News 2: p.88).

Dr. GEORGE W. RAWSON recently visited Donald Eff and collected Lepidoptera with him around Boulder, Colorado. He also collected in the Santa Rita Mts. of Arizona with Dr. Ernest R. Tinkham of Tucson and saw Harry K. Clench at Ann Arbor, Michigan.

The Aug.21, 1948, issue of the New Yorker magazine contained an excellent article about Dr. ANDREY AVINOFF. Dr. Avinoff, who retired a few years ago as Director of the Carnegie Museum in Pittsburgh, has recently received favorable attention from art critics for his painting.

Dr. CARL BÖRNER, the distinguished German entomologist whose Lepidoptera classification is perhaps the most significant one of recent years, is continuing his systematical research in spite of his advanced age. Dr. Börner writes that he needs urgently a few adult individuals of both sexes and, if possible, larvae and pupae of species of: Prodoxidae (Yucca Moths), Epipyropidae, Mimallonidae, and Pyromorphidae (such as Harrisina). He notes that specimens with torn wings or lacking scales (and thus not very good for cabinet specimens) will be very satisfactory for his anatomical work. Any collector who provides specimens will be materially aiding important research and will have the pleasure of contact with one of the finest living lepidopterists. Dr. Börner's address is: Naumburg-Saale 19a, Jenaerstrasse 22, Russische Zone, GERMANY.

QUESTIONS AND ANSWERS

Professor W.T.M. Forbes, of Cornell University, has kindly consented to prepare answers to questions submitted by members on any aspect of Lepidoptera study, if extensive library research is not necessary. Questions are to be sent to the News editor.

Q. "Prof. Forbes, I have heard of some work which you did with aquatic Lepidoptera, and would appreciate a few instructions on how to rear and collect them and exactly which species in North America are aquatic."

A. I have reared only one type of aquatics, those that feed in still water, externally on floating vegetation. I used deep china pudding dishes, containing about 2 inches of water, tying a piece of cheesecloth over the top when I expected moths to emerge. Put in a place getting plenty of light (even sunlight) so long as the water does not get very warm. In good light the green plants will oxygenate the water and keep it sweet. For running water forms (Argyractis) one would have to set up a slanting stone (or perhaps a board would do) and circulate pure water over it. Treated city water cannot be used, but chlorine can be got out of city water by circulating it a day or so before putting in the specimens.

The chief fully aquatic Lepidoptera are the normal Nymphulinae,- Argyractis on stones in running water, Elophila proper and Nymphula in the broadest sense case-makers on vegetation in still water; Acentropus (Schoenobiinae) has a completely wingless female that remains under water, and is known in eastern Canada and northern New York as well as Europe. There are also many borers in aquatic plants more or less at home under water. The best adapted of these is the Arzama group (Arzama in cattails and Bellura in water-lilies). These live below the water level in late stages, have the last pair of spiracles enlarged, and so need only to back up the burrow till the tail is out of water in order to breathe. Most of these are Noctuidae, but Pyrausta penitalis, a Pyralid, bores in water lily and is at home below water. Various other caterpillars are enough adapted to water so that they do not drown themselves. E.g., the salt-marsh caterpillar (Estigmene acraea) first turned up as injurious on marsh plants, and could swim from plant to plant. Some South American Arctiidae (especially Palustra) live wholly thus. The sphinx, Darapsa versicolor, is often found on button-bush growing in water, and must somehow manage to find a place to pupate, but I have no idea how it does it.

Q. "Is it true that there is a group of moths which are able to raise their body temperature enough to fly later in the fall and earlier in the spring than other Lepidoptera?"

A. I have no information on actual body-temperatures, but most moths with this habit are so small and delicate that it is much more likely that they are able to use their muscles efficiently at lower temperatures. They are a biological, not a taxonomic group, for they belong to many families, also containing more normal species. E.g., the three canker-worms (fall, spring and Bruce's) each belong to a different subfamily, but are still very similar in habits, appearance and adaptive structures such as wingless female, delicate wings and so on.

W.T.M. Forbes

All members may use this column to advertise their offerings and needs in Lepidoptera. There is no cost for this service. Unless withdrawn sooner by the member, each notice will appear in TWO consecutive issues.

Offer FRENCH BUTTERFLIES and MOTHS in papers in exchange for exotic ones except Microlepidoptera.
F. Gaillard, 5 Cité du Midi, Paris 18, FRANCE.

JAPANESE BUTTERFLIES offered in exchange for American species, esp. Lycaenidae, Satyridae, Nymphalidae.
S. Murayama, Shinjocho 744, Ibaraki-shi, Osaka, JAPAN.

Wanted for cash: SPEYERIA DIANA and S. LETO, female specimens with full data. J.A. Evey, Benson, Illinois.

For sale: over 500 STRYMON from all over North America collected over 17 yrs., at 6¢ each; other groups, such as Catocala, skippers, and 100 mostly So. Florida specimens at 8¢ each. D.F. Berry, Box 146, Orlando, Fla.

WISH TO PURCHASE to fill out sets:
Proc. Ent. Soc. Philadelphia: vols.1-6
Proc. California Academy of Sciences: vols.1-7
Bull. Buffalo Soc. Nat. Sciences: vols.2,3
Psyche: vols.11, 13, 15 (pref. unbound)
Proc. Acad. Nat. Sci. Philadelphia: vols.1-20
Trans. Am. Ent. Soc.: vols.1-10
The Entomologist: vol.1
C.F. dos Passos, Washington Corners, Mendham, N.J.

SPEYERIA DIANA and many other scarce Lepidoptera available for exchange for desired spp. Will also trade Lepidoptera for beetles or vice versa. No specimens wanted without full data. William F. Duhlmeier, 2535 Indian Mound Ave., Norwood 12, Ohio.

Wanted: Argynninae, Papilionidae, diurnal swamp-loving moths. Offer in exchange RARE HUNGARIAN LEPIDOPTERA of any group. Dr. L. Gozmány, Budapest XII, Györi ut 1. II. 14., HUNGARY.

PAPILIO ARISTODEMUS PONCEANA for sale and exchange. All other south Florida and Fla. Keys Lepidoptera also for exchange. H.L. King, 4618 Abercorn St., Savannah, Ga.

DANISH LEPIDOPTERA offered in exchange for papered Rhopalocera, Sphingidae, and Arctiidae. A. Andersen, Odensegade F, Ø, Copenhagen, DENMARK.

LIVING MATERIAL

For sale: PUPAE and papered or pinned adults of So. Calif. Lepidoptera. Order single specimens, or quantity at special rates; or sign up for "Butterfly & Moth of the Month" or "Chrysalis of the Month" plan.
W.H. Evans, 8711 La Tuna Canyon Rd., Sun Valley, Calif.

Wish to purchase, exchange, sell Lepidoptera ova for rearing. Mrs.Hazel Chase, 272 N.Union St.,Galion, Ohio

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Living PUPAE of Eacles imperialis and Papilio troilus offered in exchange for other specimens, including papered Papilio, or for sale at 25¢ each. Mrs. Vonta P. Hynes, 152 Meachem Ave., Battle Creek, Mich.

For sale: COCOONS of Telea polyphemus, Callosamia promethea (10¢ ea.,$1 doz.), Automeris io (15¢ ea.,$1.60 doz.), Actias luna (25¢ ea.,$2.50 doz.), Attacus cynthia (20¢ ea.), Anisota rubicunda (5¢ ea.,59¢ doz.), Ancana mylitta (50¢ ea.). Bombyx mori eggs (50¢/100).
E.A. Ferguson, 1213 Bellflower, S.W., Canton, Ohio.

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ADDITIONS TO THE LIST OF MEMBERS

Arntz, Arnold, 110 Spring St., Syracuse, N.Y. MACRO: N.A. Sphingidae, Catocala. Tropical LEPID.
Karp, Ben, 3148 Foothill Blvd., La Crescenta, Calif.
Lengyel, Julius F. (Dr.), Budapest XII. Budakeszi ut 38. HUNGARY. European RHOP: esp. Melitaea; European MACRO: esp. Noctuidae (Cucullia). Distribution, Zoogeography. Coll. Ex.
Phillips, G. Lylle, 2746 Adams St.,Salt Lake City 6,Utah.

CHANGES OF ADDRESS

Cobb, R.B., 1109 Asbury Rd., Cincinnati 30, Ohio.
Evans, W.H., 8711 La Tuna Canyon Rd., Sun Valley, Calif.
Frederick, E.J., 501 Pennsylvania Ave., Richmond, Calif.
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Fuller, S.V., Cassadaga P.O., Volusia Co., Florida.
Hemming, Francis, 28 Park Village East, Regent's Park, London N.W. 1, ENGLAND.
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Preston, F.W., 217 E. Barton Rd., Whittier, Calif.
Reinthal, W.J. (Dr.), Dept. of Zool. Sciences, University of Oklahoma, Norman, Oklahoma.
Rindge, F.H., Dept. of Insects, American Museum of Nat. Hist., Central Park West at 79th, New York 24, N.Y.
Tilden, J.W. (Dr.), 125 Cedar Lane, San Jose, Calif.
Towers, A.A., 2421 Sagamore Dr. N.W., Atlanta, Ga.
Whittaker, R.H. (Dr.), Dept. of Zoology, State College of Washington, Pullman, Wash.

Mailing date for Lep. News, Vol.3, no.9 (December, 1948): 25 January 1949.

Separates of the pages of listings of "Recent Literature on Lepidoptera" are available for members who may wish to clip the references for their card files. Two copies of each listing (one for subject file, one for author file) will be sent as each issue is mailed, for $0.50 for Volume 3. A back set of the 441 listings in Volume 2 may be obtained for the same price. As in 1948, members outside of the Americas may receive these pages at no cost merely by requesting them.

THE LEPIDOPTERISTS' NEWS
The monthly periodical of the Lepidopterists' Society

Membership is open to all persons interested in any aspect of the study of butterflies and moths. The 1949 dues, including subscription to the NEWS, are $2.00 for Regular Membership and $4.00 or more for Sustaining Membership. Please make remittances payable to Charles L. Remington. Price for Vol. 2 is $2.00. No complete sets of Vol. 1 are available.

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The Lepidopterists' News

THE MONTHLY PERIODICAL OF THE LEPIDOPTERISTS' SOCIETY
c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON
Volume III | February 1949 | Number 2

OFFICIAL REGULATIONS FOR SHIPPING LIVE INSECTS

Since the first issue of the Lepidopterists' News we have made efforts through the News to promote studies of immature stages of Lepidoptera, including rearing, exchanging, and even buying and selling eggs, larvae, and pupae. Consequently we feel it is our duty to inform the News readers in North America on the governmental regulations which concern shipment of living insects, both to protect lepidopterists and to facilitate their compliance with the legal requirements. We are grateful to Mr. C.F.W. Muesebeck, of the U.S.Department of Agriculture, to Dr.T.N. Freeman of the Canadian Department of Agriculture, and to Mr. Fred T. Thorne, of California, for aiding in assembling this information.

For shipments to Canada, the statement is as follows: "The regulations under Destructive Insect and Pest Act require a permit to import living insects into Canada. Applications for permits should be addressed to the Secretary, Destructive Insect and Pest Act Advisory Board, Department of Agriculture, Ottawa, Ontario, Canada."

For the U.S.A., the following official statement has been provided us: "The shipment of living insects is governed by the Insect Pest Act of 1905, ... Persons contemplating the importation or interstate shipment of living insects should, therefore, make application to the Division of Foreign Plant Quarantine, U.S. Department of Agriculture, Washington, D.C. , for permits authorizing the movement of the material. The Act refers specifically to insects notoriously injurious to cultivated crops in cluding vegetables, field crops, bush fruits, orchard trees, forest trees, or shade trees. Although it does not refer to beneficial and non-economic forms, postal officials, transportation employees, and others concerned can not be expected to differentiate between those insects which are harmless or beneficial and those which are of economic importance. These agencies are cooperating in the enforcement of the Act, and it has been found that movement of even those forms which are not considered as restricted by the Act is facilitated when the shipment is accompanied by a permit."

Many States have regulations, but California is most concerned with restriction of shipments. The law reads as follows: "It is unlawful to import into or ship or transport within the State, any live insect, except honey bees... unless such shipment or transportation is authorized prior to shipment under written permit...of the California director or the United States Department of Agriculture."

"THE NEARCTIC BUTTERFLIES"

Current Developments

Hereafter the Society's proposed series of studies of the "Butterflies North of Mexico" will be referred to as THE NEARCTIC BUTTERFLIES. This is a better definition of the scope of the project since the political boundary between the U.S.A. and Mexico is not biological, parting faunae that are basically the same - southwestern U.S.A. and northern Mexico.

Progress is being made in getting the cooperation of Society members. (See page 20.) In February some seventy-odd collaborators received the data sheets for information about species in the genus Danaus in their collections. This information will be used by Dr. Fox in his study. If there are other members who wish to contribute information, they should get in touch with the undersigned.

The present editorial staff is almost complete. Changes will be made as they become necessary through the years of publication.

Editor-in-Chief - F. Martin Brown

Section Editors

Danaidae	- Richard M. Fox
Satyridae	- Ralph L. Chermock
Nymphalidae	- (not yet confirmed)
Lycaenidae,etc.	- William D. Field
Papilionidae	- F. Martin Brown (temporary)
Pieridae	- Alexander B. Klots
Hesperioidea	- (open)

Consultants

Biogeography	- F. Martin Brown
Botany	- William T. Penland
Immature Forms	- Charles L. Remington

The work will be published in the form of generic monographs. Each genus or group of small closely related genera will form a single publication. Each will be complete in itself yet each will constitute a definite part of a collected work on the Nearctic Butterflies. The format will measure 4 5/8 by 7 inches, printed on a 6 3/4 by 10 inch page.

A style manual has been prepared and will soon be issued to the various editors and authors. Other members of the Society may get copies from the project Editor-in-Chief or the Society office at cost.

F.M. Brown

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WHAT IS SYSTEMATICS?

by Sergius G. Kiriakoff
Ghent State University, Ghent, Belgium

The readers of the Lep. News have no doubt much appreciated the substantial articles by Dr. Remington on Taxonomy. The object of this note is to give a short account of a more general aspect of the question of the scope of Systematics. There exists a tendency, more distinct on the American side of the ocean, to consider Systematics as a synonym of Taxonomy (see Remington, Lep. News, vol.2: p.26) which actually corresponds to the most restricted meaning of the first term. Some authors, mostly European, think that these terms are not synonymous and that in fact the first of them has a much broader meaning than the second which it includes. There are a few scattered indications of this point of view in the literature, but only one complete discussion of the subject exists, that by the Soviet dipterist Paramonov ("Gegenwärtige Systematik, ihre Methoden und Aufgaben", Trav. Mus. Zool. Aca. Sci. Ukraine,vol.4: pp.3-25. 1934). I have only recently read Paramonov's paper and was struck by the great similarity, not to say identity, of his views with my own. Here follows a summary of Paramonov's proposed definitions, slightly amended so as to bring them in complete concordance with my own views.

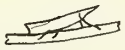
SYSTEMATICS is a biological science with usually two aspects, viz. the theoretical side and the practical side. With regard to zoological Systematics, in which we are primarily interested, these two aspects are: a) Zoonomy and b) Zoography.

ZOONOMY or theoretical Systematics is the study of the biological laws under which the present animal kingdom has developed and taken on the aspects which it now has. Most of the biological rules we are acquainted with (irreversibility law of Dollo, law of the homologous series of Vavilov, climatic rules of Gloger, Allen and Bergmann, etc.) must be considered to belong here. Phylogeny (which also has its own practical aspect) cannot be better placed than as a branch of Zoonomy. Even Mendel's law and thus certain aspects of Genetics are so intimately connected with Zoonomy that one is entitled to ask himself whether Genetics cannot be included in the great science of Systematics; this, however, is open to too much controversy, so that temporarily we may as well leave it out of consideration.

ZOOGRAPHY or practical Systematics comprises the following sections:

1. Taxonomy or the science of the hierarchy of systematic unities or categories (see 3, below);
2. Diagnostics or the description of the known animal forms with their characteristics;
3. Classification or grouping of the known animal forms into categories according to their mutual relationships. An example will show the difference between Taxonomy and Classification:if some species are placed partly in the genus Speyeria and partly in Boloria, this is classifying; if we try to establish whether Speyeria and Boloria are entitled to generic or to subgeneric rank, this is taxonomy.
4. Nomenclature or the doctrine of the rational scientific names.

Taken in this broad meaning, Systematics forms, in its turn, part of a complex of several very nearly related sciences, viz. Zoogeography, Faunistics, and Ecology. Systematics is deeply indebted to these various sciences without the help of which it hardly could claim any progress. On the other hand, Systematics forms as it were the backbone of zoogeographical, faunistical and ecological work, which could not have any practical value if not aided by Systematics.



PROCEDURE IN TAXONOMY - VI. TYPES OF GENERA

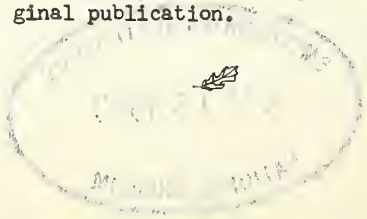
In order to achieve a uniform system of applying generic names during revisions of classification, the concept of the type of a genus was devised. The type of a genus is one species and the generic name must always be applied to the genus of the type species. For example, Libythea was long considered to include several species such as celtis, bachmanii, motya, etc.; recently the Old World species were found to be generically different from the New World species; since celtis is the type species, the name Libythea had to be used for celtis and the other Old World species, and a new generic name was proposed for the New World Snout Butterflies.

The name for the type species of a genus has regrettably been "genotype" for many years. This is not a valid term etymologically, since the combining form derived from "genus" must be "gener-". Thus, THE CORRECT TERM IS "GENEROTYPE". The only possibly valid use of "genotype" for a generic type would be its devious derivation from the Greek equivalent of genus, "genos". In spite of the long usage of "genotype" in taxonomy, the correction of the old error has become imperative because the same term is used universally in genetics for an entirely different meaning. Geneticists formed the word by deriving it correctly from "gene", the coined word for the unit in living cells which controls heredity. Genetics is a science on an equal footing with taxonomy; the term "genotype" is far more important in genetics than in taxonomy; in genetics it is correctly formed; and genetics and taxonomy are becoming more and more interrelated and thus the term would tend to become used increasingly for two meanings in the same papers - four compelling reasons why taxonomy must abandon this term for the type of a genus. In fact, numerous modern taxonomists have already adopted "generotype". This has long been the editorial policy of the News.

Modern taxonomists who name new genera clearly designate the generotypes. However, it has been necessary to select types for most of the old genera in which more than one species was originally placed. The four terms for generotypes proposed by O.F. Cook in 1914 (Amer. Nat., vol.48: p.314) and commonly used by entomologists are:

ORTHOTYPE - type designated in original description of genus;
HAPLOTYPE - only species in genus originally;
LOGOTYPE - type selected after original description of genus;
PSEUDOTYPE - type incorrectly selected after original publication.

C.L. Remington



REGIONAL LISTS

by Harry K. Clench
Willow Run Village, Michigan

Publications dealing with Lepidoptera tend, in general, to divide themselves into several fairly discrete types. Descriptions of new species or subspecies, group revisions or monographs, descriptions of early stages are among the commonest. There also exists one other very frequently encountered type of paper, unfortunately rarer now than in former years, THE REGIONAL LIST. It is the aim of this discussion, not only to present a few pointers on the preparation of such lists, but also to make a plea for their increase in numbers.

Broadly speaking, any work which treats all the members of any taxonomic category from any defined geographical area might logically be termed a "regional list". Since this definition, however, includes such widely differing types of treatment as Holland's Butterfly Book, the McDunnough 1938 Check List or a (hypothetical) list of the Strymon of the Cincinnati region, it is necessary to restrict the use of the term a good deal. For the purposes of this paper a regional list may be described as being an annotated list of the species, subspecies, etc., of a category of family level or higher (usually no higher than Order, however), of a defined area of dimensions less than continental in size. The dimensions usually adopted are political, though they in no sense need be. Those most frequently employed are state or province, city environs, national parks, islands. When the size of the area concerned becomes large (say United States; Canada; North America) it ceases to be a regional list and becomes (or should become, under a conscientious and careful pen) a faunal treatise, with problems and purposes quite different; or else a check-list, which is, too, a different matter. When the category is less than family level, and even that strains the matter, it is either revisional (i.e., taxonomic or systematic) or else a special subject study.

The regional list, adequately prepared, is a tool of many varied uses. First is its service to the visiting collector. A good list will enable him to plan a visit to the region, knowing what to expect and able to take advantage of emergence dates. Another, more important, use of a regional list is that made by the specialist revising a group. Much of his distributional data will come from such lists. Further, the amount and detail of observations on the biology of the species in the list will help him more in other phases of his revisional work, even to the point of furnishing leads on new directions of investigation.

The additional uses are important indeed, but less easily described. They all stem from the fact that A WELL-WRITTEN LIST IS AN ACCURATE RECORD OF CONDITIONS AT SPECIFIED TIMES IN A SPECIFIED PLACE. The study, even the awareness, of changes in these conditions either with respect to time or to place, are immeasurably facilitated by such records. We may cite such changes as population size or area; migration records; foodplant variability of a species over different areas.

Since any conscientious student writes a paper with a purpose, it is evident that the composition of a regional list must be made with its future use constantly in mind. This automatically brings up the subject of what should be included, and what excluded, from consideration.

First and by far the most important is the CORRECT IDENTIFICATION of all names employed. This is so self-apparent that it may verge on the foolish even to mention it. The fact remains, however, that all too many lists in the past have lost considerably in usefulness, even to the point of being confusing or actually misleading, by the inclusion of inaccurately determined species. The writer himself may be unfamiliar with many of the groups, at least to render expert decisions on critical taxonomic points. That is a job for a specialist, requiring large collections and library facilities hardly possible for all. The Board of Specialists established by the Lepidopterists' Society was designed to take care of just such a condition. Its members are recognized authorities in their particular groups, quite abreast of recent taxonomic changes and familiar with the species of their group far more than most others. Their help should be enlisted for the determination of any doubtful species. A good plan in this connection is to send to the specialist a list of the species of his group proposed for inclusion in the regional list. From this he can request for examination any that he suspects are misidentified, subject to possible racial variation, etc., and can at the same time revise the nomenclature to bring it up to date. It is essential that the authorities who made the identifications be clearly stated in the regional list.

Second only to correct identification is the DISTRIBUTIONAL INFORMATION. Brief general remarks on the entire range of the species may be desirable, especially if the list is to have a large local consumption, but in any case as much information as possible should be given concerning the distribution within the area treated. This should include as a minimum a listing of all localities in which the species has been taken. In lists of areas of state size, especially where these have a relatively unvarying topography, countries may be sufficient. In areas of varied topography altitudinal ranges are a necessity. Too much detail cannot be given: space limitations may require some condensation, however. An excellent example of detailed distributional treatment is "The Butterflies of Yosemite National Park" by J.S. Garth (1935, Bull. So. Calif. Acad. Sci. 34: 37 et seq.). Garth presents detailed locality data, altitude, and life-zone restrictions, all in condensed, space-saving form, yet not cryptic.

Whether or not to include REFERENCES under the species depends on individual circumstances. If the list treats a region where the fauna is poorly known, the nomenclature rather unstable, the species poorly represented in collections, then references are almost a necessity. Lists that are destined to

be used in large part by people possessing little or no detailed knowledge of the Lepidoptera (such as university-sponsored state or local lists, which are often used by students or entomology as aids to identification) should contain references, at least to some generally available or easily obtained illustrated work, noting such changes in nomenclature as may have been made. Leighton's "Butterflies of Washington" (1946, Univ. Washington Publ. in Biol.9: 47 et seq.) illustrates this nicely. The nomenclature and sequence of species and groups usually follows a recent check list. Such a fact should be noted, as well as any deviations from that check list as a result of recent group revisions.

Notes on the LIFE HISTORIES are very valuable and important, especially the food plant or plants of the particular species. It should be emphasized, however, that for any such information given, its source should be marked. Lepidoptera often vary from place to place in their choice of food plants, a fact that is easily obscured if a plant be cited from some other work without reference. The important facts to be noted are: 1) Is the information quoted from another source and where? 2) Is the information locally observed and if so, in what manner: female observed to oviposit on the plant; species raised on the plant; individuals observed in vicinity; or a predilection to visit or remain nearby? These may be important differences. Many species show predilections for plants that are not their larval food. Often females will oviposit on plants that are not proper larval food (thus causing sterility or death). Seasonal or brood variation in choice of food plant has been noted for several species (notably Lycaenopsis argiolus of Europe, and probably pseudargiolus of North America), a fact that should be kept in mind, as such a sequence might vary from place to place. The correct identification of the host plant is as important as for the insect itself. Samples of host plants should be submitted to a competent botanist for identification (see Lep. News, 3: 2). It is no longer acceptable for a writer to state for the host plant: "grasses" or "pines" or "ferns". The name of the botanist who makes the identifications should of course be given. It is also significant to give all biological notes on larvae, such as the exact species of parasites found (see Lep. News 3: 2), whether it is tended by ants, which birds and lizards feed on it, and so on. Larval color, too, may change from one place to another, and is important.

DATES OF EMERGENCE should be carefully noted, giving where possible not only dates of earliest appearance, but also period of greatest abundance and approximate disappearance. Where there are several broods per season these should each be noted, and whether or not the broods are discrete.

The above constitute the minimal requirements (not necessarily in such fine detail; observations of that precision are often only possible after many years of residence in an area). What other information should be included depends on the observative powers of the writer. Locally observed migrations, yearly fluctuations in abundance, and similar things are all valuable and properly included in such a list.

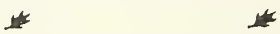
In the introduction to the list a few additional features should find inclusion: an account of the topography is valuable; summary of climatic information-- temperature and precipitation data; an outline map is very advisable. It goes almost without saying that if the region has been covered previously in whole or in part, reference to such previous coverage should be made. An historical sketch of collecting in the area, important collections of its fauna and similar data are valuable and interesting.

The "don'ts" in writing a regional list have been broadly covered, either directly or by inference, above. There remain a few, however, that should be brought up at this point. The most important is the inclusion of descriptive text. Unless a new species or subspecies is involved, the most that is ever required in a regional list is a few words concisely comparing the subject with possibly confusing relatives that occur with it. Far better than consuming space, type, and ink with such verbiage - which is usually overlooked anyway - is to select those confusing, interesting or poorly known species or races and illustrate them-- half-tones are usually satisfactory, the more so since color reproduction is almost prohibitive in cost.

A second "don't" should be mentioned, though the failing is much less frequent now than formerly. This is the inclusion of taxonomic or systematic changes. A regional list is no place to insert such material, as it is thus very easily lost to compilers and researchers who depend on the titles as guides to the contents of the papers. If such changes are unavoidable, and for a variety of reasons they may be, they should be indicated in the title. Descriptions of new species or subspecies are a special case of taxonomic inclusion and are properly admissable in a regional list, IF they are from the region covered and THE FACT IS NOTED IN THE TITLE.

In conclusion, it should be stressed again that the need for regional lists is great, that their usefulness is enduring, and that a properly, carefully prepared list will be a mine of information for many years, a genuine contribution to the science.

The Coleopterists' Bulletin is no longer a mimeographed monthly journal, but "is issued at irregular intervals depending on the amount of manuscript material at hand", and is now regularly printed. Its attractive format and valuable contents are a credit to its publisher and editor, Dr. Ross H. Arnett, Jr. Lepidopterists' Society members also interested in beetles will find the Bulletin of considerable utility. The subscription fee is $1.25 per volume and should be sent to Dr. Arnett at: 2826 N. Fairfax Drive, Arlington, Va., U.S.A.



TECHNIQUE NOTE

Dr. S.L. de la Torre y Callejas, of Matanzas, Cuba, writes that he now finds ether sulphuric with carbolic acid superior to salicylic alcohol to suppress mildew in his collection. (See his earlier note in the Lep. News, vol.2: p.86).

THE MIGRATION OF BUTTERFLIES IN NORTH AMERICA

by C.B. Williams, Sc.D.
Rothamsted Experimental Station
Harpenden, England

I have been interested in the migration of butterflies for over thirty years, and have been fortunate enough to see definite flights in South and Central America, in the West Indies, in Egypt and East Africa, at sea in the Atlantic and the Mediterranean, and here at my home in England. I have noted with pleasure the increasing interest in the subject in North America and welcome this opportunity to draw your attention to some of the problems confronting the student in that area.

In the British Isles we have only 68 species of butterflies(of which at least one is extinct), and of these 17, or one quarter, are known to migrate; and about 11 are dependent on immigration for their continued occurrence within our shores. In North America you have I believe nearly 700 species, but of these my list of recorded migrants only contains about 30 names. I am sure that the true number is over 100 species and perhaps double this. My list is as follows:

PAPILIONIDAE:- Papilio cresphontes; P. troilus; P. philenor.
PIERIDAE:- Ascia monuste; Eurema lisa; E. nicippe; Phoebis eubule (sennae); Kricogonia lyside; Colias philodice; C. eurytheme; Pieris napi.
NYMPHALIDAE:- Vanessa cardui; V. atalanta; V. virginiensis (huntera); Nymphalis californica; N. j-album; Agraulis vanillae; Precis lavinia coenia; Polygonia interrogationis; Asterocampa celtis; Limenitis archippus; Anaea andria.
LIBYTHEIDAE:- Libytheana bachmanii.
DANAIDAE:- Danaus plexippus; D. berenice.
LYCAENIDAE:- Strymon melinus.
HESPERIIDAE:- Urbanus proteus; Achalarus lycidas; Hylephila phylaeus; Hesperia attalus; Calpodes ethlius.

Part of the immediate work of the members of the Lepidopterists' Society should be to amend and extend this list, if possible sorting the species between regular migrants and irregular wanderers.

In the publications listed at the end I have summarised at intervals what is known of the movements of most of these species, and there is not space here to repeat all this. The following notes therefore relate to special outstanding problems.

First, general problems:- It is important to find the origin or winter homes of your immigrants. Do they survive the winter in your own sub-tropical states? Do they fly across the Caribbean Sea or do they come through or from Mexico? Just before the War we started a campaign to get records of butterflies from ships at sea. Could something similar be done from the Gulf of Mexico?

Is there a return flight? The more we study the migrations of butterflies (and moths) the more evidence we find of flights in opposite directions at different seasons; they are usually to the north in the spring and to the south in the autumn. Often these two flights are very different in intensity: the flight in one direction may be large, and gregarious, and so conspicuous and frequently recorded; the flight in the opposite direction may be very thin and only seen by careful watching. Students of migration should always be on the lookout for thin directional movements, or the evidence will be biased in favour of large flights. D. plexippus definitely has a return flight and the evidence also strongly supports similar movements in P. eubule (see below), A. vanillae and others. It is curious that the majority of well established movements in Europe are towards the north in the Spring, while in North America they are (with the exception of V. cardui) towards the south in the autumn.

How do the insects keep their direction? We don't know!, but more careful observations in the field cannot fail to be helpful. Carry a compass and if you see a directional flight, record carefully the bearings of flight and wind, and any change in the direction and intensity of either. If the flight lasts a long time (I have seen one that continued for sixteen weeks), take frequent observations and a number of specimens at intervals. These will help to check up on identifications. Many flights are known to consist of several species moving simultaneously. A hundred or more is not too many, as they can be used for statistical measurements and possibly fat extraction (see 1).

FILING RECORDS. We use a standard 3 x 5 inch card for filing and extracting information. A reproduction is shown. Usually many of the squares are blank, but they serve as a reminder to both observer and student.

1945 (Year)	Sept. 10 (Month and Dates)	Milwaukee Wis. U.S.A. (Locality (Place and County))	to South (Flight direction if definite)
2.35-4.30 p.m. (Time of day)	(Wind direction and force)	huge swarm several thousand (Numbers seen)	X (No. captured and in whose collection)
X (Sex)	Y (Condition)	First seen 2.35. Followed in next 2 hours by additional swarms At 4.30 rose and flew off (Notes — Extent of flight, speed, starting, egg laying, etc.)	
X (Present & past weather conditions — temperature, rain, sun, cloud, thunder, barometer, etc.)	X	X	just clearing elm tops (Height above ground)
Mrs E. B. Canfield 835 N. Cass St. Milwaukee (Recorder's Name and Address)	(Observer (if not Recorder))	telken (Source of Information)	
D. plexippus (Species (Specific name))	X (Other insects in same flight)	Mrs Canfield (Identified by)	

MIGRANT INSECT RECORD

MARKING. Before the War some hundreds of butterflies were marked in England (see 6: p.222), but without any recovery at a distance. The mark should enable the finder to know where to communicate the discovery, and should enable the marker to identify the actual individual. Here we used a registration number and 'LONDON ZOO'. The latter was considered

to convey the most definite information in the fewest letters. Our Zoo agreed to forward any information - but the War came instead!

Now as to species:-

Danaus plexippus (see particularly 2:pp.141-156 and 6: pp.155-184). Both sexes migrate regularly from southern Canada to the southern states in the autumn, and back again to the north in the spring. There are many records of the autumn flights, but few observations on the spring movement. Information is needed on the dates of first and last appearances in different latitudes and different localities. In the south the butterflies hibernate in masses on trees. Such localities are known in southern California and in Florida, usually very close to the sea. What other areas are there? Are there hibernating areas along the Gulf coast in Alabama, Mississippi, Louisiana or Texas? Are there any inland localities? What happens to the butterflies that fly south through Texas in the fall? Do they go onto Mexico? If so, do they hibernate there,or remain active, or breed? Beall (see 1)has recently studied the fat content of the bodies of 'Monarchs' before and after migration, but his available material from the south was small. Can anyone help him?

I am writing a book on 'The Migration and Dispersal of Insects' and very much want a good colour photograph of hibernating D. plexippus. Can anyone help me?

Vanessa cardui. The 'Painted Lady' is a regular migrant both in Europe and in North America. In some years it is abundant in the summer as far north as Canada, and as far to the northeast as Newfoundland. The only records of immigration in the spring appear to be from western Mexico, where at times enormous swarms fly to the north. There were big immigrations in 1924, 1926, 1931, 1935, 1941, and 1945. In some of the intervening years scarcely a single individual was seen (see 4). Is there any other source of immigration? Do flights come through Florida? From climatic conditions this is unlikely as V. cardui multiplies most rapidly in arid climates and none exist south of Florida. Most of the Vanessa that I have seen from Florida have been V. virginiensis (huntera). Do any 'Painted Ladies' survive the winter in the U.S.A.? If none survive the winter and if there is no other origin than western Mexico, then the Newfoundland butterflies must have had a flight of nearly 3000 miles, something even for a staunch believer in butterfly migration to swallow!

One of the most interesting discoveries that we have made recently is that in the past 60 years the years of big immigrations have tended to be the same both in Europe and North America(see 6: p.252). Please collect all records of cardui in any part of the U.S.A. - and also records of known absence - both past and present and future - so that this theory can be tested more fully in a few years' time.

Is there any evidence for a return flight to the south in the fall? It will require VERY careful observation. Here in Europe we have such evidence, but scanty.

Ascia monuste. According to the observations of Mr. and Mrs. Hodges (see 6: p.143) this species flies to the south along parts of the Atlantic coast of Florida from about March to May, sometimes in great numbers, and then suddenly the direction changes and the movement for the next few weeks is towards the north. From the relative abundance of the grey variety, which becomes more abundant as the season advances, it would seem that the population that flies north is not the same as that that previously flew south. More information and more observations are required - both in Florida and elsewhere.

Phoebis eubule. P.H. Smyth (see 4: p.227) made a remarkable series of observations, lasting for seventeen years, on this species in Alabama. He established a definite movement in large numbers towards the southeast from August to November, and a very thin return flight to the northwest in March and April. Where do the butterflies go in the north, and where is the breeding area? In Florida on the contrary Mr. and Mrs. Hodges recorded them as flying south along the east coast nearly all the year. Do they cross the ocean to the Antilles? Do they cross the Caribbean to South America? The species is common in South America and is a regular migrant there, but the two areas have not yet been linked up.

In England both the V. atalanta and N. antiopa (which we call the Camberwell Beauty and you call the Mourning Cloak) are regular immigrants. There are suggestions of movements of V. atalanta in the U.S.A., but what about N. antiopa?

There are a thousand other questions that I could mention but space is limited. The Editor has however kindly offered to publish a second note on migration of butterflies in Europe and other parts of the world in a later number of the Lep. News.

REFERENCES

(1) Beall, G. 1948. "The Fat Content of a Butterfly, Danaus plexippus, as affected by migration." Ecology, vol.29: pp.80-94.

(2) Williams, C.B. 1930. "The Migration of Butterflies." pp.xi, 473. Oliver & Boyd, Edinburgh & London. (Includes Bibliography of about 800 references).

(3) ----------1937. "Butterfly Travellers." Nat. Geog. Mag., vol.71: pp.568-585.

(4) ----------1938. "Recent Progress in the Study of some North American Migrant Butterflies." Ann. Ent. Soc. America, vol.31: pp.211-239. (Includes 50 references to N. American migrations).

(5) ----------1939. "Some Records of Butterfly Migration in America." Proc. R. Ent. Soc. London (A), vol.14: pp.139-144.

(6) Williams, C.B., Cockbill, G.F., Gibbs, M.E., and Downes, J.A. 1942. "Studies in the Migration of Lepidoptera." Trans. R. Ent. Soc. London, vol.92: pp.101-280. (Includes about 550 references not included in Williams 1930).

A LETTER TO THE EDITOR

Mendham, New Jersey
February 26, 1949

To the Editor:

In the December issue of the Lepidopterists' News (vol.2, p.103), you report Dr. Curtis W. Sabrosky at the 1948 annual meeting of the Entomological Society of America as having spoken "forcefully about the recent activities of the International Congress of Zoology in completely revising the International Rules of Zoological Nomenclature" and state that he "criticized severely the apparently dictatorial and unannounced actions of Mr. Hemming, secretary of the International Commission" at its 13th meeting at Paris last summer. This Congress consisted only of those individuals who attended the meeting, and all its members, especially the Commissioners and those who attended the section on Nomenclature, as well as the Secretary of the Commission must be deemed to be the objects of these criticisms.

Dr. Sabrosky was not present at the Paris meeting, so his remarks as reported concerning what took place there are but conclusions based on hearsay. On the other hand, I did attend the Congress as a delegate, and devoted my time to the meetings of the section on Nomenclature, which section was responsible primarily for the changes in the Rules. I was present at about two-thirds of those meetings which were held in the mornings, afternoons and evenings. Consequently, I appear to be in a somewhat better position to describe the procedure followed and comment on the results attained.

Before the Congress was held, Mr. Hemming flew to this country and within the very limited time at his disposal consulted the Joint American Committee on Entomological Nomenclature, and as many zoologists as possible in Chicago, New York, Ottawa, Washington, and possibly elsewhere, about the matters that might come before the meeting. Naturally this visit did not permit Mr. Hemming to confer with everyone, everywhere about everything, nor could he agree upon the precise language of any proposed amendments to the Rules that might be adopted by the Congress, nor even determine the matters that might be brought up, since the latter subjects were obviously beyond his control. It was for the meeting to pass upon all these matters. Therefore, how could every action to be taken by the Congress be announced in advance, and to whom, when, and how?

The meetings of the section on Nomenclature consisted of joint sessions of the Commissioners, their alternates, and members of the Congress who desired to attend. This was most democratic. Previously, I believe, the Commissioners had always met by themselves. The meetings were conducted by Mr. Hemming as Chairman, who brought with him from London a mimeographed dossier divided into thirteen parts and consisting of about one hundred and twenty pages, larger than legal size, covering in minute detail various matters that were expected to come before the meetings. Copies of this file were furnished the Commissioners, and so far as available, loaned to the other members of the section. In addition, six other lengthy parts were prepared during the meetings and furnished to those attending, and finally a report was prepared for submission to the plenary session of the Congress. This imposed a tremendous amount of work upon Mr. Hemming.

At the meetings each proposition upon which action was proposed was distinctly stated and explained. It was then discussed by those who wished to be heard. In many cases the wording of the propositions was changed or redrafted, after which each proposition was put to a vote. While most proposals were adopted, some were rejected. All voting was practically unanimous, but, of course, a majority vote was sufficient to carry any proposition. All of this was strictly in accordance with parliamentary law. It is fair to assume that the meetings I was unable to attend followed the same general pattern. It is sheer nonsense to say that Mr. Hemming indulged in any "dictatorial" action, or that anything was "forced through". The majority of those attending the section meetings, where the spade work was done, were Englishmen and Americans. Can anyone believe that every single American present would sit silently by while amendments were being "forced through" under the "dictatorial" influence of the Secretary? All differences of views, and such admittedly occur at every large gathering, were ironed out by discussions, and those not thus disposed of were settled by a majority vote. Democracies act through majorities, even though the majorities at times be in fact minorities of those interested.

The final plenary session of the Congress unanimously approved the report of the section on Nomenclature. Thus the Rules were amended, and in many, many respects made ever so much better than they were. When the final vote was called for, can anyone believe that there was not a single American with sufficient courage to rise and denounce any improper procedure at the meetings, if it had occurred? Were they all so cowed that they had to wait until they were three thousand miles away from Paris to regain their composure and then voice a belated protest? To ask the foregoing questions is but to answer them. No power can suspend or restrict the operation of the amendments until the next Congress convenes. The assumption of such power by anyone would indeed be "dictatorial".

Of course, no Rules of Nomenclature ever had or ever will have any legal standing. The Rules do have the highest moral and ethical standing and will be observed by all zoologists of intelligence, cooperativeness, and good will. The soundness of the Rules, as they existed before the recent meeting, had been proved by experience, but they were very fragmentary, as everyone knows. Their value will be greatly enhanced by the amendments adopted at Paris. Strictly speaking, it is not accurate and may give rise to false impressions to say that the Rules were "completely" revised. It should be made clear that the fundamental provisions have not been altered. It would be more accurate to say that the Rules were corrected, amended, and annotated by incorporating the opinions of the Commission under the provisions

to which they relate. The former skeleton, after changing some slight defects in its anatomy, has been covered with flesh and clothed in a modern costume. Still, the fundamentals remain the same.

Mr. Hemming, who for many years has given his spare time to the work of the International Commission on Zoological Nomenclature without receiving any compensation whatsoever, deserves the highest praise and the most generous thanks of all zoologists throughout the world for the meticulous care with which he prepared for the recent Congress, and the invaluable results obtained thereat, largely as the direct consequences of his preparatory work. When the amended Rules can be seen in black and white, I feel sure that the vast majority of zoologists in America will be completely satisfied with them. It will be time enough then for constructive criticisms.

Yours very truly,

(signed) Cyril F. dos Passos

Editor's note: It may be of aid to give those Lep. News readers who have never had occasion to use the International Rules of Zoological Nomenclature a brief explanation of the background of the controversy of which Mr. dos Passos' letter is a part. The movement toward a stabilized system of Latin names for animals got its greatest momentum when an International Zoological Congress, near the beginning of the present century, appointed a committee to prepare a set of international "rules" which would try to harmonize the contrasting views on the proper choice of names to be used. To some degree the procedures had varied according to nationality, but also some acrid personal disagreements had appeared in print. While relative objectivity was achieved by the drafting committee, and a set of rules was adopted, some of the then irreconcilable differences of opinion were glossed over by shrouding verbiage and others were left out entirely.

For several years there has been especially strong agitation to amend the Rules, adjust the conflicts which had arisen from contradictory Opinions (interpretive rulings by the permanent Commission), and incorporate rules for the omitted points. Dr. Sabrosky has been one of the leaders in this endeavor and has been regarded as notably objective in his labors. It is worth reiterating that the "Rules" must depend on general acclamation for their support. It seems obvious to me that this general acceptance must PRECEDE final adoption. If this is so, the present Congress system, with action taken by a small, unrepresentative, and in some cases insufficiently informed group of individuals, is not the right way to revise the Rules. How unsound it is to confront the world's systematic zoologists with a fait accompli and hope that general acclamation will result! We admire Mr. Hemming's devotion to his duties on the Commission and shall undoubtedly be in hearty accord with most of the changes in the Rules, but we are convinced that Dr. Sabrosky has a sound case against the procedures surrounding the action at the 1948 Congress. It is necessary to state this here, since Dr. Sabrosky and his coworkers will publish their exposition in a journal which may be seen by few News readers.

C.L.R.

COOPERATORS WITH "THE NEARCTIC BUTTERFLIES"

With the October, 1948, issue of the Lep. News cards were sent to the North American members of the Society. These cards were to be returned to the Coordinating Editor to indicate the degree to which each member was interested in cooperating with the project outlined in the News (vol.2: pp.77-78). Most of those who wish to cooperate have now returned their cards. The summary of the cards received is:

75 favorable 8 unfavorable

The tally by States is given in the following table. The first number shows how many in the 1948 "List of Members" are interested in "RHOP." or "LEPID."; the second number is for favorable replies.

CANADA	9 - 7	Missouri	4 - 2
Alabama	1 - 1	New Hampshire	2 - 2
Arizona	1 - 0	New Jersey	5 - 1
California	39 - 9	New Mexico	1 - 1
Colorado	7 - 4	New York	27 - 7
Connecticut	5 - 2	North Carolina	1 - 0
Dist.of Col.	3 - 2	North Dakota	1 - 0
Florida	4 - 1	Ohio	11 - 8
Georgia	4 - 1	Oregon	4 - 1
Illinois	16 - 4	Pennsylvania	11 - 1
Idaho	1 - 1	Rhode Island	1 - 0
Kansas	1 - 0	South Dakota	1 - 0
Kentucky	2 - 1	Texas	9 - 1
Maine	2 - 1	Utah	2 - 0
Maryland	4 - 2	Virginia	3 - 0
Massachusetts	8 - 3	Washington	5 - 2
Michigan	8 - 3	Wisconsin	6 - 4
Minnesota	2 - 0	Wyoming	2 - 2
Mississippi	1 - 1		

F.M. Brown

LEPIDOPTERA PERIODICALS FOR SALE

In November, 1916, the Boston Entomological Club (actually lepidopterological only) began to publish a small periodical called The Lepidopterist. After 1 volume of 13 numbers the editor, S.E. Cassino, withdrew it from the Club, copyrighted the name, and continued publishing it. In all, 4 more volumes were published from 1918-1931, each with 12 numbers, except the last, with only 3 numbers. When Cassino removed the title from the Boston Club, the Club continued their journal as Lepidoptera, beginning with "Vol.II". Both periodicals contained descriptions of new species and forms as well as field notes. There is much of interest and importance in both.

The Museum of Comparative Zoology at Harvard University has unearthed a large stock of copies of these periodicals and is offering them at reasonable prices. A few sets of The Lepidopterist, complete except for Vol.3, no.8, are available for $3.00. Single copies of all issues (except Vol.1: no.4; Vol.2: nos.9,10; Vol.3: no.8; and Vol.4: no.1) are offered for $0.10 each if text only; $0.15 if text and plates. Of Lepidoptera only Vol.2 (minus nos.4, 9) is available, nos.1-3,5-8,10 offered for the same price as single numbers of The Lepidopterist. Please mention your Lep. Soc. membership when ordering these from: Robt. L. Work, Librarian, Museum of Comp. Zoology, Harvard University, Cambridge 38, Mass.

C.L.R.

RECENT LITERATURE ON LEPIDOPTERA

17. Bell, Ernest L., "Two new species of Telemiades and notes on some others (Lepidoptera, Rhopalocera)." Am. Museum Nov.,no.1385: 10 pp.,7 figs. 3 Jan.1949. Describes as new T. fides (Balboa, Canal Zone), T. brazus (Neudorf,Brazil); lifts T. antiope from synonymy as distinct from T. amphion; shows T.misitheus, marpesus, pehakia to be races of T. amphion. Male genitalia of all but pehakia figured.
18. Berger, Lucien A., "Apropos de Pieridae." (In French). Bull. & Ann. Soc. Ent. Belgique, vol.84: pp.28-32. 28 Feb. 1948. Discusses Dufrane's paper (see our review in Lep. News, vol.2: p.96). Shows many nomenclatural errors; criticizes some new infrasubspecific naming; sinks Colotis mathieui Dufrane under C. evenina sypilus Swinh., C. paradoxa Dufrane under C. evippe mediata Falb., and C. vreuricki Dufrane under C.subfasciatus ducissa Dogn.; sinks Colias minuscula f. peruviensis Duf. under C. dimera f. semperi Stkr.;corrects two wrong generic placements.
19. Breland, Osmond P. & Lucille Hagan Schmitt, "The Biology of Two Sunflower Gall Makers (Diptera: Cecidomyiidae; Lepidoptera: Lyonetiidae)." Ent. News vol.59: pp.225-234,3 pls. Nov. 1948. The lyonetiid was Bucculatrix fusicola,found in Helianthus annuus. Biology described, galls figured. 42% of gall parasitized, by 3 spp. of parasites.
20. Caspari, Ernst, & Josephine Richards,"On the proteins of a^+a^+ and aa in Ephestia". Proc. Nat. Acad. Sci., vol.34: pp.587-594, 2 figs. Dec. 1948. A suggested mechanism for the inhibition of eye pigment formation in aa moths. (P.B.)
21. Cazal, P.,"Les glandes endocrines rétro-cérébrales des insectes (étude morphologique)." (In French). Bull. Biol. France & Belg. Suppl. no.32: 227 pp., 186 figs. 1948. A very important survey of the morphology of the "retro-cerebral endocrine glands" of insects, based on Prof. Cazal's own studies of 27 out of 33 orders. These hormone-secreting glands are the corpora allata and corpora paracardiaca. The Lepidoptera are covered in pp.123-129 and figs. 117-123, considering glands of Pieris brassicae, Aporia crataegi, Bombyx mori,Macroglossa stellatarum, Hyloicus ligustri, Deilephila euphorbiae, Zygaena sp., Ephestia kuhniella. Lepidoptera much like Trichoptera (caddis-flies) in having 2 prs. paracard. nerves, lateralized corpora paracardiaca and allata, and no hypocerebral ganglion. Finds evidence of close relationship of Lepidoptera with Trichoptera,Neuroptera, Diptera, Aphaniptera, Mecoptera, Hymenoptera. Suggests a superorder "Trichoptéroïdes" for Lepidoptera and Trichoptera.
22. Chermock, F.H. & D.P. Frechin, "A New Race of Incisalia eryphon from Washington." Pan-Pacific Ent., vol.24: p.212. Oct.1948. Describes race sheltonensis (Shelton, Wash.). Types in Carnegie Mus. No figs.
23. Collenette, C.L.,"The Lymantriidae of Java." Ann. & Mag. Nat. Hist. (Ser.12), vol.1: pp.685-744, 3 pls. 4 Feb. 1949. Lists 146 forms, giving the location of the types and locality records of specimens examined, as well as notes on distribution, classification, etc. The following are described as new: Euproctis tanystola; E. conisalea; E. camellia; E. ochacantha; E. dichthyas; E. epichrysa; E. enochra; E. tjikorei; E. conistrae; E. tina; E. casta; E. pollux; E. eclipes, E. exitela; E. trettes; E. tjikopo; E. azela; E. perplexa schistocarpa; Lymantria rhabdota; Dura helicta; Aroa abalia; Neorgyia javensis. All new species and a few others are illustrated; the male genitalia of some species are figured. (P.B.)
24. Corbet, A. Steven,"Papers on Malaysian Rhopalocera. VII.The Skeat Expedition to the Siamese Malay States in 1899-1900 and the Faunal Boundary in North Malaya" Entomologist, vol.82: pp. 8-15, 1 map. Jan. 1949. List of species collected; the faunal boundary is drawn as determined by the occurrence of indicator species of butterflies. (P.B.)
25. dos Passos, Cyril Franklin, "New Butterflies from Mount McKinley National Park, Alaska, with a review of Erebia rossii (Rhopalocera, Satyridae)." Amer. Mus. Nov., No. 1389: 17 pp., 28 figs. 6 Jan. 1949. Describes as new in great detail: Oeneis mckinleyensis and E. rossii gabrieli; 12 fine photos of each and 4 of E. rossii ornata. Records and synonymies of above 3 and races rossii and kuskoquima of E. rossii.
26. dos Passos, Cyril Franklin, "The distribution of Oeneis taygete Geyer in North America with descriptions of new subspecies (Lepidoptera, Satyridae)." Amer. Mus. Nov., No.1399: 21 pp., 16 figs. 26 Jan. 1949. Describes as new races of O. taygete: gaspeensis(Mt. Albert,Que.); fordi(Kuskokwim River, Alaska); edwardsi (San Juan Mts., Colo.). Selects neotype of O. t. taygete in Carnegie Mus. (Hopedale, Labrador.) Clear photos of neotype of taygete, type of O. bootes, and types of all new races, but no genitalia. Extremely detailed descriptions and synonymies for all 4 races of taygete. A remarkably thorough paper!
27. Ferrel, Carol M., Howard Twining, & Norman B. Herkenham, "Food habits of the Ring-necked Pheasant (Phasianus colchicus) in the Sacramento Valley, California." Calif. Fish & Game, vol.35: pp.51-69, figs.9-14. Jan. 1949. Crop contents examined from 179 adults and over 50 chicks included larvae of Pieris, Sphingidae, Noctuidae, Geometridae.
28. Freeman, T.N., "The Correction of a Genotypic Citation for the Genus Choristoneura Led." Can. Ent., vol.81: p.10. Jan. 1949. Corrects his former lapsus calami by citing Tortrix diversana as correct generotype.
29. Good, P.M., & A.W. Johnson, "Paper chromatography of pterins." Nature, vol.163: p.31. 1 Jan. 1949. A method for determination of these characteristic pierid pigments from very small samples (single butterfly wings). (P.B.)
30. Haggett, G., "Notes on Lepidoptera in West Sussex in 1948." Entomologist, vol.82: pp.25-32. Feb. 1949. (P.B.)
31. Harrison, J.W. Heslop, "A contribution to our knowledge of the Lepidoptera of the Isles of Lewis and Harris." Entomologist, vol.83: pp.16-19. Jan. 1949. Annotated list from two of the Outer Hebrides. (P.B.)
32. Hessel, S.A., "New Jersey Rhopalocera - Strymon cecrops Fabr." Journ. N.Y. Ent. Soc., vol.56: pp.243-244. Dec. 1948. Records capture of S. cecrops near Reed's Beach on northwestern part of Cape May Peninsula on September 7,(1947) and August 26, 1948, in a small swamp of about one acre in area. The author believes the insect breeds there and describes its flight and habits. A valuable contribution to field observations. (C. dP.)
33. Lempke, B.J., "Trekvlinders in 1947." (In Dutch). Entomol. Berichten, vol.12: pp.305-311, 316-325, 7 figs. Dec. 1948, Jan. 1949. Eighth annual report on Lepidoptera migrations in Holland. Records and graphs given for 9 species of butterflies, 15 species of moths. Unusually numerous in 1947 were: Pontia daplidice; Colias hyale; Issoria lathonia; and Macroglossum stellatarum. Conclusion: "On the whole a very good year for migrants."
34. Lempke, B.J., "The Ortholitha Problem (Lep. Geometridae)." Entomologist, vol.82: pp.1-7. Jan. 1949. Reviews the forms of the two west European species of Ortholitha. (P.B.)

35. McDunnough, J., "A new race of Pseudohazis hera from southern Colorado." Jour. N.Y. Ent. Soc., vol. 56: pp.249-250. Dec. 1948. The author of the paper credits the name "Pseudohazis hera ssps. magnifica" to Reverend Bernard Rotger of Capulin, Colorado, who captured the specimens and drew the original description. The holotype male and allotype female from three miles east of Mesita, Costilla Co., Colorado, in the sagebrush country were taken on August 13, 1943, and are in the collection of Reverend Rotger. There are eleven "topoparatypes", one of which is in the American Museum of Natural History. It is unfortunate that the holotype, at least, was not deposited in a museum. (C.F. dP.)

36. McDunnough, James H., "Critical notes on certain Pero species (Lepidoptera, Geometridae)." Amer. Mus. Nov., no.1393: 11 pp. 18 Jan. 1949. Detailed information given on Grossbeck's specimens used for his 1910 Pero revision. Ten spp. considered.

37. McDunnough, James H., "Notes on Phalaeninae (Lepidoptera)." Amer. Mus. Nov., no.1394: 14 pp., 7 figs. 18 Jan. 1949. Describes as new Abagrotis baueri (Lake Co., Calif.). Gives key to female genitalia of 21 spp. of Euxoa; suggests E.misturata should be synonym of E. orbicularis; shows "E. redimicula" is really 2 spp.: redimicula Morr. of N. Atlantic states and servita Sm. of the prairie and Rocky Mts. Records Feltia repleta from Florida. Designates lectotype of Agrotis dentilinea. Figures ads. and female genitalia of E. redimicula and E.servita; also of A. dentilinea and A. semiclarata.

38. Morrison-Godfrey, P.W., "Butterflies of South Bihar." Journ. Bombay Nat. Hist. Soc., vol.47:pp.644-651, 1 map. Aug. 1948. An annotated list. (P.B.)

39. Nieuwenhuis, E.J., "Lepidoptera van den Banggai-Archipel II." (In Dutch). Tijdschr. voor Entom., vol.89(1946): pp.139-148, pl.XII, figs.1-3. 1948. 49 spp. and subspp. of families Arctiidae(22), Lymantriidae (7), Lasiocampidae (1), Bombycidae (1), Eupterotidae (2), Saturniidae(3), Brahmeidae(1), Sphingidae (12) are recorded from the Banggai Archipelago. New are: Asure snelleni subsp. duplicata, Asota brunnescena, Pericallia distinguenda subsp. bangaiensis, Nyctemera vandenbergi (all Arctiidae), Pseudojana roepkei(Eupterotidae). Furthermore, photographs are given of P. roepkei and of Dasychira bipunctata Ns. and of Euproctis collenettei Ns. It is deplorable that as late as 1948 descriptions of new species are being published in such a little known language as Dutch, instead of in one of the internationally accepted European languages. (A.D.)

40. Roepke, W., "Lepidoptera Heterocera from the summit of Mt. Tanggamus, 2100 m., in Southern Sumatra". Tijdschr. voor Entomol., vol.89: pp.209-232, pls. XIII-XIV. 1948. 62 spp. and subspp. are recorded, including 2 Zygaenidae, 9 Lithosiidae, 2 Drepanidae, 2 Cossidae, 27 Agrotidae (Phalaenidae), and others. New genera are: ALLODREPANA, PARAMOCIS, ACYGONIA. New spp. are: Celama sumatrana, C.vicina, C. indefinita, Roesalia montivola, Argylla culminicola, Mustilia lieftincki, Allodrepana siccifolia, A.sumatrana, Chloroplaga javana, Tortriciforma viridissima, Paramocis maculata, Acygonia difformis, Arthisma rectilinea, Hydrillodes nebeculalis, H.subtruncata, Hypena calligraphalis. New subspp. are: Eterusia costimacula lampongana, Euplexia albovittata culminis. All above figured, and a few known spp. (A.D.)

41. Satterthwaite, A.F., "Important Sunflower Insects and Their Insect Enemies." Journ.Econ.Ent., vol.41: pp.725-731. Oct. 1948. Records habits, parasites, descriptions of: Suleima helianthana and Stibadium spumosum.

42. Scholten, L.H., "Celerio euphorbiae L. en de zomer van 1947." (In Dutch). Entomol. Berichten, vol. 12: pp.267-270. 1 Sept. 1948. A record of the occurrence of this Sphingid throughout the extremely warm and sunny summer of 1947 in Holland. (A.D.)

43. Sevastopulo, D.G., "Local Lists of Lepidoptera from the Punjab and U.P." Journ. Bombay Nat. Hist. Soc., vol.47: pp.586-593. Aug. 1948. 4 incomplete lists, taken from the author's collections. (P.B.)

44. Smith, P. Siviter, "How Many Broods are There of Lycaena phlaeas L.?" Ent. Rec. & Journ. Var., vol. 61: pp.1-3. Jan. 1949. From 2 to 3 in Britain. (P.B.)

45. Steinhaus, Edward A., "Polyhedrosis,("Wilt Disease") of the Alfalfa Caterpillar." Journ. Econ. Ent., vol. 41: pp.859-865, 3 figs. Dec. 1948. Describes and figures symptoms and histology of this virus disease which is an important enemy of Colias eurytheme.

46. Swezey, Otto H., "Insect Invaders in Hawaii During and Since World War II." Journ. Econ. Ent., vol.41: pp.669-672. Oct. 1948. Records as new lepidopterous "invaders" of Hawaii: Anacamptodes fragilaria; Achaea janata; Amyna natalis; Polydesma umbricola; Elaphria nucicolora; Trichochlea postica; Stictoptera subobliqua.

47. Tjeder, Bo, "Insekter från södra Bohuslän 1946." (In Swedish). Ent. Tidskr., vol.69: pp.215-224, 2 figs. 20 Dec. 1948. Records of insects taken at Bohuslän include moths of 16 spp. in 9 families.

48. Viette, P., "Lépidoptères" in "Croisiere du Bougainville aux iles australes françaises." (In French). Mém. Mus. Nat. Hist. Nat., vol.27(n.s.): pp.1-27, pls.I, II. 1948. Redescribes in detail and figures genus Pringleophaga and adult, larva, pupa of P. kerguelensis, genus Embryonopsis and in morphological detail E. halticella, the two remarkable flightless, brachypterous species from the Kerguelen Is. M. Viette places Pringleophaga in the subfamily Tineinae and Embryonopsis in the family Hyponomeutidae. Also redescribes and figures Exala strassenella and its larva (Lyonetiidae). A very important paper.

49. Viette, P., "Une nouvelle espèce de Metzneria (Lep. Gelechiidae)." (In French). Bull. Soc. Ent. France, 1948: pp.51-53, 5 figs. 1948. Describes as new and figures M. portieri (Abyssinia).

50. Viette, P., "Morphologie des génitalia mâles des Lépidoptères." (In French). Rev. franç. Ent., vol. 15: pp.141-161, 10 figs. 1948. Discusses and figures the general structures of male genitalia of Lepidoptera and their homologies. Concludes that TEGUMEN is 9th tergite, VINCULUM is sternite or subcoxosternite, VALVE is coxopodite or coxa, UNCUS and GNATHOS are the tergite and sternite or a tergal or sternal process of the 10th segment. Bibliography gives 95 references.

51. Wright, Sewall, "On the Roles of Directed and Random Changes in Gene Frequency in the Genetics of Populations." Evolution, vol.2: pp.279-294, 7 figs. Dec. 1948. Of lepidopterological importance because of stated disagreement of Prof. Wright with generalizations on population genetics of moth Panaxia dominula by Fisher & Ford (1947) and reanalysis of their data. Questions whether Panaxia situation is due to shifts in selection or to accidents of sampling or both (Fisher & Ford had considered variations in selection as the factor).

52. Zikán, Walter, & Petr Wygodzinsky, "Catálogo dos tipos de insetos do Instituto de Ecologia e Experimentação Agricolas." (In Portuguese). Bol. Serv. Nac. Pesq. Agr., no.4: 93 pp. May 1948. Catalogue, giving full data, of all type specimens in collection of the Institute. Included are following species and forms of Lepidoptera: Saturniidae - 2; Hesperiidae - 5; Papilionidae - 4; Satyridae - 5; Danaidae - 2. 17 of the 18 are types of Zikán's names. A valuable reference paper.

NOTICES BY MEMBERS

Wanted immediately for generic revision, all species of genus Annaphila Grt. EXCEPTING A. divinula Grt., A. decia Grt., A. depicta Grt., and A. diva Grt. Material from Arizona, New Mexico, and Texas especially needed. Distributional, ecological, and biological data desired. Offer in exchange Rhopalocera and Heterocera of So. and Central Calif. C.I. Smith, Dept. of Entomology & Parasitology, Agriculture Hall, Room 112, University of California, Berkeley 4, Calif.

WANTED: Copies of the data from specimens of the following species and races of PAPILIO:

P. bairdii hollandii, P. b. brucei
P. nitra, P. n. kahlii
P. machaon aliaska, P. m. hudsonianus, P. m. dodi

Will be glad to supply data from any species of Rhopalocera to be found in the collection of the American Museum of Natural History in return.
Paul R. Ehrlich, 538 Academy St., Maplewood, N. J.

Subscriptions to Entomologisches Nachrichtenblatt, a German language mimeographed monthly periodical devoted largely to Lepidoptera, are offered by its editor in exchange for butterfly and moth pupae or for Lepidoptera literature. Write: Adrian Lüthi, Inneres Sommerhaus, Burgdorf, SWITZERLAND.

Wanted for cash or exchange: EUPHYDRYAS of the world in series. Also Nearctic MITOURA in series.
D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

For sale: European races of PARNASSIIDAE in papers or mounted with exact data and in good condition. P. apollo L. var brittingeri R. a. R. ♂♂ (= chetus Fruhst.), P. mnemosyne L. var. hartmanni Stdfs. ♂♀ and ab. melaina Honr. ♀ and ab. umbratilis Fruhst. ♀ (extremely melanistic forms). Supply limited, order early.
Dr. W.J. Reinthal, Dept. of Zool. Sciences, University of Oklahoma, Norman, Okla.

Wanted to buy: The Moth Book, by W. J. Holland (1937), in good condition.
Mrs. Emily Henricksen, Orcas Island, East Sound, Wash.

THE NEW BIO METAL STANDARD redwood box, with screw-on hinges and mitered corners at shoulders, 9 x 13 x 2½ inches: $2.10 each, $24.00 dozen.

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Bio Metal Associates, Box 346, Beverly Hills, Calif.

For sale: "The MACROLEPIDOPTERA OF THE WORLD" by A. Seitz. Volume 5 in 4 vols. (2 of text, 2 of plates) bound in buckram. Volume 9 in 2 vols. (1 of text, 1 of plates) bound in calf and buckram. All plates and text intact, good condition. Both Vol. 5 and Vol. 9 for $250.00, shipping charges extra.
M. Spelman, 2751 Grand Concourse, New York 58, N. Y.

Will collect in any group in exchange for LEPIDOPTERA, excluding Trichoptera and Orthoptera (contracted). Would especially like to collect Arachnida and Myriapoda for taxonomists.
D.P. Frechin, 1504 Lafayette, Bremerton, Wash.

Wanted for cash: SPEYERIA DIANA and S. LETO, female specimens with full data. J.A. Evey, Benson, Illinois.

4,000 GEOMETRIDAE, ARCTIIDAE, NOCTUIDAE, BOMBYCIDAE, HEPIALIDAE OF AUSTRIAN ALPS pinned but unspread need to be sold to provide space for 1949 collecting. Especially Acronicta, Euxoa, Rhyacia, Dianthoecia, Cosmia, Anarta, Acidalia, Ortholita, Boarmia, Biston, Gnophos, and many others. Each for 15¢, including the very good species. 25% discount for orders over 1000 specimens. Speciments perfect and with full data.
Dr. H. Wilcke, Kössen/Tyrol, No. 199, AUSTRIA.

Offer FRENCH BUTTERFLIES and MOTHS in papers in exchange for exotic ones except Microlepidoptera.
F. Gaillard, 5 Cité du Midi, Paris 18, FRANCE.

JAPANESE BUTTERFLIES offered in exchange for American species, esp. Lycaenidae, Satyridae, Nymphalidae.
S. Murayama, Shinjocho 744, Ibaraki-shi, Osaka, JAPAN.

For sale: over 500 Strymon from all over North America collected over 17 yrs., at 6¢ each; other groups, such as Catocala, skippers, and 100 mostly So. Florida specimens at 8¢ each. D.F. Berry, Box 146, Orlando, Fla.

WISH TO PURCHASE for my library:

Proc. Ent. Soc. Philadelphia: vols.1-6
Proc. California Academy of Sciences: vols.1-7
Bull. Buffalo Soc. Nat. Sciences: vols.2,3
Psyche: vols.11,13,15 (pref. unbound)
Proc. Acad. Nat. Sci. Philadelphia: vols.1-20
Trans. Am. Ent. Soc.: vols.1-10
The Entomologist: vol.1

C.F. dos Passos, Washington Corners, Mendham, N.J.

LIVING MATERIAL

The News will welcome especially notices concerning the exchange or sale of Lepidoptera eggs, larvae, and pupae, hoping to revive the old interest in rearing and to re-emphasize the importance of studying the immature stages Contributors are urged to include accurate locality data with all material sent.

For sale: PUPAE and papered or pinned adults of So.Calif Lepidoptera. Order single specimens, or quantity at special rates; or sign up for "Butterfly & Moth of the Month" or "Chrysalis of the Month" plan.
W.H. Evans, 8711 La Tuna Canyon Rd., Sun Valley, Calif.

Will exchange a quantity of cocoons of Telea polyphemus and Philosamia cynthia with any members for papered specimens of Papilio or what have you?
A. Glanz, 289 East 98th Street, Brooklyn 12, N. Y.

Contacts desired to obtain live pupae of Sphingidae and Saturniidae, and eggs of Catocalinae. Dr. v. Froreich, Postschiesfach 431, Aachen, GERMANY (British Zone).

Eggs of Actias luna for sale in season by the 100 or 1000. M. Eugene Smith, Rt. #2, Newnan, Georgia.

Desire to purchase or exchange living Saturniid pupae of the world. Have limited number Rothschildia forbesi and/or orizaba pupae for sale or preferably in exchange.
R.L. Halbert, 1201 W. 30th St., Los Angeles 7, Calif.

Wish to purchase, exchange, or sell living Lepidoptera ova for rearing.
Mrs. Hazel Chase, 272 N. Union St., Galion, Ohio.

Q. "Is there a set of distinguishing marks to tell all moths from all butterflies, and are the butterflies really a suborder? One of my friends says butterflies are only one small branch of Lepidoptera."

A. Not quite. The combination of no frenulum with more or less swollen (clubbed) antennae will distinguish practically all butterflies from almost all moths. Many other characters separate most butterflies from most moths: the upright egg, the seta-pattern of the caterpillar (setae iv and v low and separate, and many fine secondary setae present), trachea R_{4+5} of the pupa crossing the cell (I think separates all butterflies from all moths except a few of the more delicate "micros"); loss of upper spurs of hind legs (except skippers), two rows or patches of bristles on the front (Chaetosema: fails in many butterflies, but I have not seen it in moths); etc. "Suborders" are partly a matter of opinion: in any case the butterflies are a group higher than a superfamily, homogeneous and easily recognized and very rich in species and individuals, - certainly not "one small branch".

Q. "Why do some of my moths and butterflies get greasy or wet-looking and what can be done to prevent it? I use Riker mounts - would that cause it?"

A. After the specimens dry, the natural storage fat in the body gradually works to the surface and may spread to the wings also. Certain preservatives, especially the phenols (carbolic and creosote) and P.D.B., tend to make it spread faster. It can be washed out with any chemically inactive dry-cleaning solvent, such as benzol, chloroform, unleaded gasoline (if on test it proves to evaporate without leaving a stain). Even white kerosene will serve though not so well. Immerse large specimens in it; surround smaller ones with pads of cellucotton and saturate with it, leaving it to evaporate slowly. Papered specimens that are likely to go greasy are best washed papers and all before spreading. The worst kinds are borers, long-lived kinds like the angle-wings, and the skippers. Males are worse than females. Riker mounts are as safe as anything else.

W.T.M. Forbes

REPRINTS AVAILABLE

Supplies of reprints of several recent papers by Society members have kindly been sent for gratis distribution to those members requesting them. The following are available until the stock is exhausted: "The Distribution of Oeneis taygete Geyer in North America with Descriptions of New Subspecies" and "New Butterflies from Mount McKinley National Park, Alaska, with a Review of Erebia rossii" by C.F. dos Passos; "Sôbre a Genitalia das Fêmeas de Hepialidae", "Revisão dos Nomes Genéricos de Família Sphingidae Pt.1", and "Sôbre a Morfologia do Penis em Lepidoptera" by J. Oiticica Fº; and "The Rothamsted Light Trap" by C.B. Williams. There are still a few copies of dos Passos' "The Eye Colors of Some Colias Collected in New Jersey." U.S.A. members requesting reprints please send 5¢ to 15¢ (depending on number) in stamps for postage; all other members will be provided postage gratis.

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ADDITIONS TO THE MEMBERSHIP LIST

Blevins, T.B. (Dr.), Tilden Lane, R.F.D. #5, c/o T.H. Briggs, Rockville, Maryland. RHOP: Papilionoidea, esp. Nymphalidae.

Eyer, John R. (Dr.), New Mexico Agric. Exper. Sta., State College, N.M. MICRO: esp. Lyonetiidae, Hepialidae, Micropterygidae. Morphology, Life History. Coll. Ex.

Forsyth, Marguerite S. (Mrs.), P.O. Box 96, Florida City, Florida. RHOP. MACRO. Coll. Sell.

Hesselbarth, Gerhard, (23) Diepholz (Hann.), Hindenburgstr. 13, GERMANY. Palaearctic RHOP. & MACRO: esp. Papilionidae, Pieridae, Bombyces, Arctiidae. Coll. Ex.

Perkins, Owen A., 1605 Crooks Road, Royal Oak, Mich. LEPID. Distribution. Coll. Ex. Buy.

Smith, P. Siviter, 21 Melville Hall, Holly Road, Edgbaston, Birmingham 16, ENGLAND.

Ziegler, J. Benjamin (Dr.), 18 Baltusrol Place, Summit, N.J.

CHANGES OF ADDRESS

Friday, F.W., Box 72, Palm Desert, Calif.
Johnston, W.M., 383 South St., Jamaica Plain, Mass.

Numerous members did not return their membership cards when sending 1949 dues. It will greatly simplify the already heavy task of keeping the Society records, if these cards are sent to the Associate Editor as soon as possible.

A much regretted erratum crept into Dr. Munroe's paper, "Some Remarks on the Genus Concept in Rhopalocera" (Lep. News, vol.3: pp.3-4). Please make a correction in the second paragraph as follows: delete lines 16-17; substitute lines 18-19 for lines 16-17; for lines 18-19 substitute:

"usefulness of the genera to the non-specialist for purposes of routine identification or general de-"

THE LEPIDOPTERISTS' NEWS
The monthly periodical of the Lepidopterists' Society

Membership is open to all persons interested in any aspect of the study of butterflies and moths. The 1949 dues, including subscription to the NEWS, are $2.00 for Regular Membership and $4.00 or more for Sustaining Membership. Please make remittances payable to Charles L. Remington. Price for Vol. 2 is $2.00. No complete sets of Vol. 1 are available.

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The Lepidopterists' News

THE MONTHLY PERIODICAL OF THE LEPIDOPTERISTS' SOCIETY
c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON
Volume III March 1949 Number 3

FIELD NOTES

NEW LOCALITY FOR OENEIS DAURA.- This last June I had the opportunity to do some collecting on San Francisco Peaks just north of Flagstaff, Ariz.,and collected along with other things a species of Oeneis. I had taken a few specimens of this Oeneis in 1946, but not enough to make a determination certain. So I was very glad to increase my series. During the Christmas holidays I had the opportunity to be in Los Angeles,and took my entire series over to Lloyd Martin for determination. After comparing them with the Museum's long series of O. daura Str. from the White Mts. we were forced to conclude that they were identical, since we could find no essential differences. This gives us a locality approximately 100 miles to the west of their previously known range in the White Mts. of eastern Arizona. Also it is a much more accessible locality since it is only a few miles north of U.S. highway 66, and there is an old road that enables one to drive to within easy hiking distance of the locality. The specimens were taken at between 9,000 and 10,000 ft. elevation on the southern slope.

D.L. Bauer
Yuma, Arizona

ON PAPILIO "FLYWAYS".- Mr. Ehrlich's recent note (Lep. News, vol.2: p.92) on the use by P.glaucus L. of a regular route, one way in the morning and the other way toward evening, is very interesting. I, as well as others, have noted P. palamedes Dru. doing this in the South, and roosting in tall palmettoes. Several months apart, Mr. Otto Buchholz and I observed the use by P. troilus ilioneus Smith of a very restricted route to roost in the interior of a hammock at Royal Palm State Park, Fla. Actual communal roosting in other butterflies (such as Heliconius charithonia L.) has been observed;but specific notes on the actual roosts are lacking for Papilio. Such data would be very valuable.

Alexander B. Klots
American Museum of Natural History

COLLECTING IN FLORIDA FOR TOURISTS.- A few notes from a recent (February) trip to Florida may interest some northern lepidopterists who might take a similar vacation trip in the future. The prior part of the trip took us to many points of "rubberneck" interest. Butterflies were common in all, but the warning signs and tourists prevented any collecting. I took a couple of species by hand but had no chance for more. Some of the striking ones seen were Heliconius charithonia L.,Agraulis vanillae L., Anartia jatrophae L., Athena petreus Cram. and numerous Pieridae. However, the only opportunity to use a net occurred at the end of the Orange Blossom Trail, at Ravine Gardens, a few miles from St. Augustine. This privately-owned park has flowers in profusion and opportunities for collecting. In spite of rain, we found these species: Zerene caesonia Stoll, Phoebis sennae L.,Papilio cresphontes Cram., P. philenor L., Eurema daira Godt., a Hairstreak, Euptychia sosybia (?), Eudamus proteus L., and others. Undoubtedly the collector can find good unrestricted spots if he has plenty of time, but the masses of flowers in the gardens concentrate the insects best.

H.E. Woodcock
Chicago, Illinois

OBSERVATIONS FROM BUTTERFLY REARING.- The summer past was interesting to me entomologically because in my rearing I ran into some things I had not known before. For example, of the hundreds of Papilio glaucus L. I had reared from eggs, all went through 5 instars, but two eggs I picked up on tulip poplar (Liriodendron) went through 6 instars. Then I tried Calephelis borealis G.&R. again - my third season - and found nothing different from the other times, but some differences from the description in Canadian Entomologist, the greatest difference being that all of the 43 went through their instars as regularly as any Papilio - like clockwork - and they emerged in the same order as they pupated; each one spent the same time in each instar as all the others. THERE ARE ONLY 6 INSTARS in my 3 experiences - from egg to pupation. In each of these 3 experiences the adults emerged in September. In nature they emerge in June. I have taken the larva May 31 in its last instar and had it pupate and emerge exactly on time - June 30. I have never failed since 1937 to take the imago fresh on June 20.

Of the 25 species I raised there was another interesting observation; probably someone has written the story but I have never read it. With a larva of Limenitis astyanax Fabr. I had always thought the tip of the leaf was the mid-rib with the green on each side eaten away. But most of that stick protruding beyond the tip of the leaf is dung, carefully placed and secured by silk, one piece at a time in a line until long enough to support the larva. This is only in the 1st instar. I found many eggs on Japanese quince, but could never get a larva through the 3rd instar on the stuff, and never found a larva on it. Perhaps it is too tough. But the females kept laying eggs on it.

S.B. Smalley
Cincinnati, Ohio

TECHNIQUE NOTES

BAITING FOR MOTHS

There are many methods for making lures to capture moths. There are those who swear by the "sugar trickling method", others who won't do without the "bole smearing" patent, etc. Of all these methods and concoctions of baits for the capture of moths, I have found the following one best:

1. Buy a pound of desiccated sliced apples, or whole small dry pears. Take a string of two feet length and tie on this 4-5 pieces of the fruit. Make a loop at the end of the string. Make a dozen such strings.

2. Now, make the following juice: Heat a liter of beer. During heating put in, in spoonfuls, always stirring, a pound of honey, and then a pound of sugar. Let it brew for ten minutes. Do not put in anything else! There are people who recommend adding rum, alcohol, liqueur essences, and other ghastly things, but I have found that it has too strong a smell and is more repellent than otherwise for the moths.

3. Now you have to have two containers. One strong enough to contain the juice, which you must open every 2-3 hours for a few days, as the brew effervesces readily, and I have known cases when my friends had the container explode on them (do not use glass containers!) during the trip, as it was shaken up too much. Into the second can you put the dozen strings; and that is the container you bring along to the collecting place. First: you immerse the strings with the pears in this juice for half an hour to let them soak up enough juice but not to become spongy (they are likely to fall to pieces); second: you put the strings in the second can with some juice at the bottom, and start for the collecting place.

4. Choose the bordering trees of any forest, and hang the strings on the down-hanging branches, one string 10 paces from the next. Posts and bushes are also good for collecting in open, woodless spaces or deserts (even the dead stalks of Verbascum, etc.); in swamps you can loop them on a bundle of reed. Be careful: choose a path that can also be trodden in complete darkness; do not let strings hang down to touch the ground (ants), or too high up so that you cannot reach them comfortably with your killing bottles. Always use the edge of the forest facing West or South, else you won't get any results. Hang out the strings half an hour before darkness. When collecting, use an electric torch with a green light (any green paper pasted on the glass will do) in your left hand. This light will not repel the moths as sometimes white or yellow light does (Catocala, etc.).

To make the strings and the juice does not involve more than an hour; it looks long only in script. Good hunting!

Dr. L.A. Gozmány
Budapest, Hungary

AN INEXPENSIVE BREEDING CAGE

One of the reasons why more breeding and rearing of specimens is not carried on is that many collectors cannot afford the cash outlay necessary for the proper equipment in the line of breeding cages. Such being my case, I decided to experiment last year with glass substitutes. This experiment was hastened by the capture of a female Oeneis uhleri which laid approximately 65 eggs for me.

At any hardware store, or through Montgomery Ward or Sears, Roebuck & Co., it is possible to obtain a glass substitute that is merely two sheets of transparent Butarate plastic film or cellulose acetate fused on both sides of a reinforcing cord mesh. Thin and pliable, it is quite transparent, although not to the degree of glass, and easily shaped to almost any form. In my case, I planted the food plant in an ordinary flower pot, then formed a cylinder of this "Vi-O-Phane" by measuring the circumference of the flower pot and cutting a piece that length. It usually comes in 36" widths and you can cut it to stand whatever height you wish. In the first crude attempt I stuck the edges of the material together first with scotch tape, and later (to my sorrow) with adhesive tape. This cylinder was then fitted over the flower pot and held in place either with a string tied tightly around the pot, or by a heavy rubber band. All that remains is to drape a piece of cheese cloth over the top and there is the breeding cage.

This may sound rather crude, but it was the first attempt and other ideas on improvements have formed since then. This season, time permitting, I intend to increase the number of cages and to try to solve the problem of forming the cylinder, which is the major task, by cutting the glass substitute slightly short of the circumference of the pot so it will not quite meet. Then to form the cylinder I intend to sew a strip of elastic the length of the material, thereby making a cylinder which will be slightly smaller, but will readily stretch over the pot and be held in place by the elastic. The transparent sides permit easy observation, or the piece of cheese cloth or other material over the top is quickly removed to permit closer study, and the cylinder itself may be quickly removed for any changing of plants, etc. that may be necessary. The food plant may be watered, if the bottom of the pot is filled with gravel before planting the food plant, by simply placing it in a pan of water. Most important to me is that in this way it is possible to make a good breeding cage for as little as 35¢ in comparison with the $6 to $10 it costs to buy one ready made.

Donald Eff
Boulder, Colo.

A METHOD FOR KILLING BUTTERFLIES

I kill all of my specimens by a gentle pressure on the thorax with my forceps. This does not damage the specimen at all if done properly. It obliterates the necessity for the use of cyanide, which I prefer not to use around my family who accompany me on my collecting trips. This method does not work on moths! It "scalps" them.

T.B. Blevins
Washington, D.C.

PREPARATIONS FOR THE 1949 SEASON SUMMARY

The annual Field Season Summary of North American Lepidoptera for 1948 was mailed out to 1948 members with the preceding issues of the Lep.News.* Much increased participation is needed for 1949. Each member who gets out in the field fairly often will find new pleasure in his collecting if he will keep regular records permitting comparisons from year to year. These findings can then be permanently preserved for reference by being submitted each year for the published Summary.

A regular system for recording observations throughout the season will probably become essential for sound season summarizing. Bryant Mather, of Clinton, Mississippi, uses the following method:

"For 1948 I took a sheet of cross-section paper (Dietzgen No.375) which is divided into squares 80 x 100 on an 8½" x 11" sheet. Holding it longways I listed in a vertical column at the left the names of about 70 species that I expected to see and be able to identify, then across the top I indicated periods of time in successive 5-day intervals. By filling in squares I now have a diagram-chart that records all of the species I observed during each successive 5-day period for the year. Should I eventually have such a chart for each of a good many years, I might be in a position to discuss variation in season of flight, etc."

In my own detailed observations for four years at Principia College at Elsah, Illinois, I kept a 3" x 5" file card for every species of local Rhopalocera and recorded my data every 3 days during the entire flight period. For example, the card on Anthocaris midea states: "IV-3-42 (♂ fresh; IV-4 (♂); IV-14 (♂♂ fresh); IV-17; IV-23 (♂♂ & ♀♀); IV-27(num. eggs on Lepidium densiflorum); IV-30 (♂♂ & ♀♀); V-3 (eggs hatched); V-5 (♂♂ & ♀♀); V-12 (1st larva pupated)..." The abundance might be stated as "very num.", "num.", "few", "rare", "one", etc. The number of specimens ACTUALLY COLLECTED often has little significance in abundance records,since collectors tend to ignore common species but to catch every specimen of a rarer species.

As before, the most important observations are:

1. Flight periods for each species compared with other years.
2. Effects on Lepidoptera from unusual climatic events (floods, heat, hurricanes, etc.)
3. Significant effects from human or biological agencies (parasites, birds, fires, diseases).
4. Unusual population changes (rare species suddenly common, common species absent, etc.)
5. All records of migrations (see News, vol.3: p.17 for list of known migrant butterflies).
6. All new state records.

Individual reports for 1949 are DUE IN THE HANDS OF THE AREA COORDINATORS BY 1 DECEMBER 1949. A reminder will appear in a fall issue of the News. Please submit separate reports for collecting in different Areas.

C.L.R.

* Available separately for 25¢ per copy; the 1947 and 1948 summaries may be obtained together postpaid for 50¢.

"THE NEARCTIC BUTTERFLIES"

Progress Report - The Distribution of Danaus

To date 33 collaborators have sent in locality data on their specimens of Danaus. The material reported is from 30 States and 5 provinces. No specimens have been reported for many areas where plexippus L. is known to fly. I suppose this is to be expected for a common species. We're always "going to collect some day"! To show how commonness affects collecting, about 350 plexippus were reported, but the number of eresimus Hb. reported is nearer to 375! About 250 berenice Cram. were listed.

This first call for cooperation from the membership has indicated several things: first,a good many members are ready to contribute what they have learned about the Nearctic Butterflies to make this project a success; second, the system set up works fairly well, and it will be improved; third, very few sight records are made; fourth, it might be well to have various members volunteer to dig up the distributional data for particular States - volunteers will be welcomed; fifth, very few negative reports (absence of a species in an area) were received, but these are as important as positive catches.

There follows a tabulation of reports received, arranged by States. The first line of figures for each State always represents plexippus; if more lines are present, the second is for berenice and the third for eresimus. (For Florida there are 8 localities for plexippus, 20 for berenice, and 1 for eresimus.) With each species the first figure shows the number of localities from which the species has been reported. The fraction in parentheses denotes the number of counties represented by these localities, over the number of counties or parishes in the State or province.

F. Martin Brown
Coordinating Editor

B.C.	1	(1/9)	Ont.	2	(2/50?)
Man.	4	(1/12)	Que.	4	(4/67?)
N.S.	5	(3/17)	CANADA		(11/228?)
Ala.	1	(1/67)	Md.	1	(1/24)
	1	(1/67)	Mass.	3	(2/14)
Ariz.	7	(4/14)		1	(2/14)
	26	(7/14)	Mich.	5	(5/73)
	1	(1/14)	Mo.	2	(2/115)
Ark.	4	(3/75)	N.H.	3	(2/10)
	1	(1/75)	N.J.	2	(1/21)
Calif.	13	(7/58)	N.Y.	2	(1/62)
	14	(4/58)	N.C.	1	(1/100)
Colo.	8	(8/63)	Ohio	6	(6/88)
	3	(3/63)	Ore.	2	(2/36)
Conn.	1	(1/8)	Pa.	3	(2/67)
Fla.	8	(2/67)	S.D.	1	(1/68)
	20	(8/67)	Tex.	5	(4/254)
	1	(1/67)		19	(18/254)
Ga.	1	(1/159)		5	(4/254)
	1	(1/159)	Vt.	1	(1/14)
Ida.	1	(1/44)	Wash.	1	(1/39)
Ill.	5	(4/102)	Wis.	9	(9/71)
Kans.	2	(2/105)	Wyo.	2	(2/24)
	1	(1/105)	U.S.A.		(80/3069)
Ky.	2	(2/120)			(45/3069)
Me.	1	(1/16)			(6/3069)

A MIGRATION OF THE SNOUT BUTTERFLY (LIBYTHEANA BACHMANII) IN EASTERN ARIZONA

by George W. Rawson
Summit, New Jersey

Mass (one way) migratory flights and peak periods of abundance of certain species of butterflies have been reported in the literature from time to time. As the causes or factors influencing the unusual abundance of butterflies are not thoroughly understood, reports on the occurrence of such natural phenomena may help to solve or at least to throw more light on the subject. The following information is therefore presented with the hope that it may be of interest.

Influenced by the results of previous collecting trips made by Dr. John A. Comstock and Mr. Lloyd Martin of the Los Angeles Museum, the writer spent five days collecting in Arizona in the Madera Canyon, Santa Rita Mountains, in the neighborhood of Continental, and in the Santa Catalina Mountains a few miles northeast of Tucson, during August 29th to September 4th, 1948. The first stop on the State highway route No. 84 going southeast was made near Picacho which is approximately 45 miles northwest of Tucson. It was here on "patches" of a species of flowering willow growing along the highway that I first observed the Snout Butterfly, Libytheana bachmanii, feeding on the blossoms in fair numbers. Having lived in the Midwest - southeastern Michigan - for over twenty years where this species of butterfly is quite a rarity, I was naturally thrilled at having the opportunity to take a nice series within a few minutes. A large number was not taken at this time because I presumed I would have an opportunity to take more later, little realizing to what extent this wish was to be realized.

On the morning of August 29th, I left Tucson presumably on the road toward Continental, but after driving for about ten miles,I found I was going north instead of south. This mistake, however, turned out to be an advantage because before turning around on the highway to "retrace my steps", I noticed a species of butterfly on the wing which was so abundant as to form two waves of insects on either side of the car. This reminded me of a similar experience while driving through swarms of Mayflies (Ephemerida) in the Great Lakes area. Naturally being curious as to the species occurring in such unusual numbers, I parked the car and was able to make a determination merely by examining hundreds of specimens caught on the radiator grill. The species was Libytheana bachmanii race larvata (Strecker) which, according to a recent letter from Professor W.T.M. Forbes of Cornell University, differs from the eastern race by lacking the glossy sheen on the under surface of the wings and by being less distinctly marked.

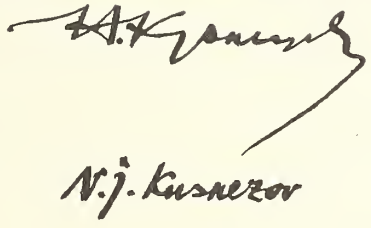
Further collecting during August 29th to September 4th emphasized the abnormal abundance of this species. Every flowering bush or plant attractive to butterflies contained such quantities of bachmanii that the blossoms were often partially or completely obscured. Because of this, choice specimens both in regard to freshness and aberrant forms could be collected by simply flicking them into a cyanide bottle by means of a finger or by holding the mouth of the bottle over or under them. Everywhere these butterflies were abundant, from the low-lying desert areas all the way to the highest parts of the mountains (8,000 feet in the Santa Catalina Mts.); altitude apparently made little difference as to numbers.

The abundance of L. bachmanii seemed to center more or less within a radius of about twenty to thirty miles around the Tucson area - that is to say, they appeared to become much less numerous outside this particular area.

As Libytheana bachmanii is known to be a migratory species, I tried to observe whether those occurring in and around Tucson were flying in any particular direction. As far as I could observe, there was no direction to their flight. Neither was there any apparent evidence as the cause or nature of their abundance. The known food plant - hackberry (Celtis sp.) - was not plentiful, at least the only trees or bushes I noticed were in or on the sides of washes in the dry desert areas. The species of hackberry which I presume was Celtis laevigata var. brevipes Sarg. gave no evidence of the presence of larvae or their depredations on the foliage, which is rather unusual considering the vast quantities of adult insects. Unfortunately, the short time I spent in the Tucson area was not long enough to enable me to determine when bachmanii first appeared, how long they were on the wing, or from which direction (if any), they first appeared and disappeared. If, by chance, any lepidopterist living in the Tucson area or collecting in this or other parts of the country during the 1948 season reads this article, it would be extremely interesting if they would publish their experience, particularly if they noted the time when bachmanii was becoming numerous, how long it remained, or any data that might be helpful in solving the problem of butterfly abundance.

Only on one other occasion - in 1908 - have I seen bachmanii in large numbers. This happened while I was fording a small river crossing a dirt highway in a "horse and buggy" near the village of Raccoon Ford in eastern Virginia. In this particular spot numerous hackberry trees,Celtis occidentalis L., were on both sides of the road. This was, of course, the typical race Libytheana b. bachmanii (Kirtland). They were present in very large numbers but only within a radius of a few hundred feet or so and represented such a meager quantity as compared to the numbers I saw in southeastern Arizona that any attempt to make a comparison would be ridiculous. Ordinarily, this species of butterfly is comparatively rare or local in its distribution in the eastern and midwestern States so that it is more or less of a prize to collectors in these sections of the country. In the West, the race larvata is apparently much more plentiful, but rarely, I believe, in such quantities as described above.

NICHOLAS J. KUSNEZOV (1873-1948)



N.J. Kusnezov

To the long list of Russian scientists of the old school recently deceased, one more unfortunately must be added. On April 8th, 1948, in Russia, passed away Professor N.J. Kusnezov, 75, known to the world as an eminent lepidopterist. In his own country, he was known also as museum worker, professor, physiologist, faunist, bibliographer, author, editor of textbooks and scientific journals, and translator; also as a very active member of the Russian Entomological Society. He left about 102 scientific papers, including 10 books (translations and textbooks), 22 faunistic lists, 300 articles in three different encyclopedias and dictionaries, several hundred reviews, references, annotations, obituaries, and notes in the journal Revue Russe d'Entomologie, and 11 unpublished manuscripts.

In a self-characterization, Kusnezov labeled himself as a scientific worker in two main fields, namely: (a) Comparative physiology; (b) Morphology, anatomy, and geographical distribution of insects. He omitted entirely taxonomy of Lepidoptera, where he was very active. That which is very characteristic of him is that in spite of his passion for Lepidoptera and taxonomy, he often cited paradoxically an opinion against what was called by the Germans "Namengeberei", which means a passion to give new names.

In this biographical sketch of Prof. Kusnezov, we will limit the field primarily to his achievements in lepidopterology. Analysing his list of publications, sent to the author May 30, 1941, we find that about half of his contributions are on the subject of taxonomy, geographical distribution, and morphology of Lepidoptera.

Born in a family of a railroad employee May 11, 1873, he accomplished Classical Gymnasium Studies in Pskov (1896) with honors. After graduation from the Physico-Mathematical Faculty of St. Petersburg Imperial University (1895), he became a member of the faculty in the chair of Zoology, Comparative Anatomy, and Physiology. Being elected Junior Zoologist by the Academy of Science (1905) he obtained an opportunity to concentrate on the Lepidoptera in the world famous Zoological Museum. The Zoological Museum became his permanent life-long headquarters. From this time to 1917, Kusnezov was deep in scientific work without deviation.

He spent the long Russian winters in the capital among his books, manuscripts, colleagues, and students; the summers in expeditions and excursions in the Biological Station at Sebastopol or abroad attending scientific congresses. This included the VIII International Congress of Zoology held in Boston, Massachusetts, in 1907, when he visited also New York, Philadelphia, Washington, and Toronto.

In 1908 he was in France and Austria; in 1911 in Germany and Austria. Through his contact with foreign scientists he became a member of scientific societies of London and Berlin and was elected a member of the Permanent Bureau of International Entomological Congresses. He spoke English, German, and French.

Between 1917 and 1925, a lapse of nine years, he published only one paper, as a result of the revolution, civil war, scarcity of paper, and the necessity to work just to make a living. In this dark period, he spent part of his time not far from the abandoned capital of the Tzars in a little farm belonging to his devoted wife's family, who did not choose to cut their ties with the land, and were the fortunate owners of a cow.

The situation improved somehow in 1920 when he was elected assistant professor at his university. In 1922, Kusnezov obtained a still better chance to make a living, entering as instructor in the Institute of Applied Zoology and Phytopathology. He lectured there on physiology and applied entomology until 1941. So since 1922, he became active in applied science; this culminated by his accepting a professorship in the Agricultural Institute in 1934. The number of pupils he left as a result is enormous.

His entry into a new field of applied science is reflected by the appearance of textbooks on subjects dealing with physiology and toxicology including his course of lectures in lithographed form (1923,1928). His second textbook appeared under the title "Physiology and Toxicology of Insects"(in General Entomology, Moscow, Pt.II, secs.3-4, 1931, 1935). The physiological studies of Kusnezov were not limited to insects alone. His "Fundamentals of Insect Physiology" (publ. Acad. Sci. URSS) did not appear until after his death. Vol.1 (1948;380 pp.) and Vol.2 (in print 1949) were completed, but Vol.3 was never finished even in manuscript form. In spite of that Kusnezov received more than one offer to have anything available translated into English.

In 1942, when Leningrad was encircled by the invading armies, not all the scientists were fortunate enough to be evacuated. As a result, many perished during the siege. Kusnezov was evacuated. No doubt his numerous pupils, then in uniform, did help him to escape the horrors of starvation. From July 1942 to August 1944, he lived "in evacuation" beyond the Urals in a resort, Borovoe (Akmolisk Region), returning to the half empty ex-metropolis to spend there his last four years of life. To the last days, he held two positions, as Senior Zoologist in the Museum and Professor of his University.

As a lepidopterist Kusnezov touched both Microlepidoptera and Macrolepidoptera, and owing to the fact that there were not too many Micro specialists in Russia at the time, he was flooded with parcels and requests for identifications. His studies in Microlepidoptera were stimulated by acquisition of the collection of M. Wocke in perfect shape by the Zoological Museum. He described at least seven new living species of Lepidoptera and established three new living genera.

His first new fossil species was Oligamatites martynovi sp.n. and gen.n. (1929). The specimen was collected in the Oligocene beds of the Semipalatinsk region. About the rest of his fossil insect discoveries and studies,see Lep.News, vol.2: p.104, Dec. 1948. His studies in classification of "Danaidae" (= Pieridae), systematic position of the genus Davidiana Obth., and Papilionidae are well-known and took considerable time. He was interested in Sphingidae and Cossidae as well. To improve taxonomic technique he entered the field of venation of wings and published papers on this subject. For the same purpose he studied in detail the morphology of the genitalia of Noctuidae resulting in seven papers on the subject, one of which was published in Woods Hole, Massachusetts.

In Macros, at the time the author of this article first met Kusnezov, he was deep in the studies of the genus Catocala. He had at his disposal a world-wide collection almost complete but accepted with thanks Catocala lupina from Ural Region. He had not less than four papers dealing with this interesting genus.

Geographical distribution of insects, faunae, and regional lists of insects comprise the second largest field of Kusnezov's studies. He identified and compiled the results of his own expeditions and excursions and the materials collected by others especially for the Academy of Science. To this field belong not less than 22 papers. The more comprehensive are contributions to the Fauna of Russia. The areas covered by lists are: Pskov, Kertch, Crimea, Himalayas, north shore of Aral Sea region, Palearctica, polar Europe, Russia in general. Some papers are sharp and critical analyses of certain foreign elements in local faunas of Lepidoptera. To those belong his "Some new Eastern and American elements in the fauna of Lepidoptera of Polar Europe" (see list 1925), "The Origin of the Lepidopterous fauna of Arctic Eurasia" (see list 1935a), and "On the absence of certain elements from the Lepidopterous fauna of the Crimea" (see list 1930b).

From 1904 to 1910 and later from 1922 to 1933 Kusnezov was editor of all publications of the Russian Entomological Society. From 1901 to 1906 he was also editing the biological section of a dictionary by Brockhause and Efron. From 1934 to 1937 he was editor of Proceedings of Zoological Institute. A large encyclopedia had his articles from 1928 to 1941. In the Agricultural Enclyclopedia 1935 to 1941 the editorial work was that of Kusnezov. He reviewed the works in applied entomology of Russia covering the period from 1917 to 1937. His translation of D..Sharp's "Insects" was published, in installments from 1902 to 1910 and purchased by subscription. It was impatiently awaited by enthusiasts and was immediately out of print. Lempert's Atlas of Microlepidoptera was not only translated and edited by Kusnezov, but it was also enlarged and the title changed as a result (1912-1913). The 4th edition of Kholodkovsky's Textbook of theoretical and applied Entomology, with Lepidoptera by Kusnezov in Vol.3, was published in 1931. This book is the pride of Russian entomologists, many of them joining in the post mortem glorification of Kholodkovsky. In his last letter to the author of this article, dated June 20, 1947, Kusnezov mentioned his illness that pinned him to his bed as chronic cholecystitis. He promised to send his Physiology of Insects when published. In his previous letter of February 16, 1947, he asked to be sent several views of New York. He wanted to compare "what mankind in the Western Hemisphere accomplished during half a century". "My personal impression of America", he wrote, "was very favorable, but I was also half a century younger. My life here is all the same in the same environment. I do not know if it is what one may call happiness?" The photograph given above Kusnezov sent earlier, inscribing it on the back with the date, 18 June 1947. To commemorate Kusnezov's death, a joint meeting of 4 scientific bodies took place on May 10, 1948. The big four were: Zoological Institute of the Academy of Science, All Union Entomological Society, Biological Faculty of the University, and Society of Naturalists. The speakers were Academician E.N. Pavlovsky, Prof. M.N. Rimsky-Korsakoff, A.S. Danielevsky, and Dr. I.V. Kozhanchikoff. A special issue of a journal or a pamphlet devoted to the memory of the late Professor was offered and accepted.

On the following page is a short list of scientific publications of Professor Kusnezov. The complete life list comprises 102 entries. Various translations and textbooks considered above are omitted. Most of Kusnezov's papers on any aspect of Lepidoptera are included.

D.N. Borodin
Long Island City, N.Y.

PARTIAL LIFE BIBLIOGRAPHY OF N.J. KUSNEZOV

1901. "The temperature experiments with Catocala fraxini L." (In Russian.) Rev. Russe d'Ent., vol.1: pp.225-230.

1902a. "On the protective coloration and attitude of Libythea celtis Esp." (In Russ.) Horae Soc. Ent. Ross., vol.35: pp.30-37, 1 fig.

1902b. "On two new species of Biston Leach (Amphidasis Tr.) from Amoorland." (In Russ.) Ibid., vol.35: pp.42-48.

1902c-1910. Transl. of Sharp, D., "Insects" (vols. 5, 6 in The Cambridge Natural History). Biblioteka Jestestvoznanija (St. Petersburg), pp.i-xiii, 729-1060, figs. 525-657.

1903a. "Excursions d'été, en 1902, sur la côte sud de la crimée." Rev. Russe d'Ent., vol.3: pp.5-7.

1903b. "Few remarks on genus Catocala Schrank in the catalogue of Lepidoptera by Staudinger and Rebel, 1901." (In Russ.) Ibid., vol.3: pp.71-76.

1903c. "A new Nearctic species of the genus Catocala Schrank (Lepidoptera, Noctuidae)." (In English.) Ibid., vol.3: pp.166-168, 6 figs.

1904a. "Malacodea regelaria Tengstr. in the environs of St. Petersburg." (In Russ.) Ibid., vol.4.

1904b. "Gynandromorphous specimen of Porthetria dispar L." (In Russ.) Ibid., vol.4.

1904c. "On the development of eye-like spots on caterpillars of Deilephila nerii L. and Porgesa porcellus L." (In Russ.) Ibid., vol.4: pp.154-161.

1904d. "Beitrage zur Kenntniss der Grossschmetterlinge des Gouvernements Pskov (Pleskau). Erster nachtrag." Horae Soc. Ent. Ross., vol.37: pp.17-70.

1905a. "New data on occurrence of Malacodea regelaria Tengstr. in outskirts of St. Petersburg." (In Russ.) Rev. Russe d'Ent., vol.5.

1905b. "On the question of the significance of the coloration of the hind wings in Catocala species." (In Russ.) Ibid., vol.5.

1906a. "Zur Frage über die Licht-Experimente mit Lepidopteren." (In German.) Zeits. Wiss. Insektenbiol., vol.2: pp.43-44.

1906b. "Zur Frage über die Bedeutung der Färbung der Hinterflügel der Catocala-Arten." (In German.) Biol. Centralbl., vol.26: pp.116-124.

1906c. "Revue des représentants de la famille des Sphingidae daus les faunes paléarctiques et en partie paléanarctique (émodo-sérique)." (In Russ.) Horae Soc. Ent. Ross., vol.37: pp.293-343.

1907. "About the periodical system of butterflies of Prof. P.I. Bakhimetieff." Rev. Russe d'Ent., vol.7.

1908a. "The collection of Microlepidoptera of M.Wocke purchased by the Museum." (In Russ.) Ann. Mus. Zool. St. Petersburg, vol.12.

1908b. "Nouveau genre paléarctique de Noctuidae." (In Russ.) Ibid., vol.13: pp.65-68.

1908c. "List of Lepidoptera collected by L.S. Berg on the northern Shores of the Aral in the year 1906." (In Russ.) Tašk. Izv. Turk. Otd. Russ. Geogr. Obšč, vol.4: pp.103-121, 4 pls.

1909. "A new species of Hipparchia Fabr. 1807 (Satyrus Latr. 1809) from the Crimea." (In English.) Ann. Mus. Zool. St.Petersburg, vol.14: pp.140-144, 2 pls.

1910. "On the possibility of viviparity among some Lepidoptera of the family Danaidae (Pieridae auct.)." (In Russ.) Horae Ent. Soc. Ross., vol.39: pp.634-561, 1 pl.

1912-1913. Transl. of Lampert's Atlas of Microlepidoptera. (In Russ.) St. Petersburg.

1913a. "Wing venation as one of the criteria in taxonomy of the Lepidoptera." (In Russ.) Rev. Russe d'Ent., vol.13.

1913b. "On schematization of the wing venation pattern of Lepidoptera." (In Russ.) Ibid., vol.13.

1914. "On the Morphology of the genital apparatus of the Lepidoptera." (In Russ.) Ibid., vol.14: pp. xiii-xv.

1915a. "On the chaetotaxy of the Hepialid larvae." (In Russ. & English.) Ibid., vol.14: pp.449-459.

1915b. "Certaines éléments de la faune des Lépidoptères de la région paléarctique." (In Russ.) Ibid., vol.15: pp.liii-lv.

1915c. "On several cases of gynandromorphism among the Lepidoptera." (In Russ.) Ibid., vol.15: pp.lvii-lx.

1915d. "Description of Parametriotes theae gen.n., sp.n., a new enemy of tea bush on Transcaucasia." (In Russ. & English.) Ibid., vol.15: pp.626-652, pls.v-ix.

1915e, 1929. "Insectes Lépidoptères (Insecta Lepidoptera)" in "Faune de la Russie". (In Russ.) Mus. Zool. Acad. Sci. (Leningrad): vol.1: pp.i-cccxxxvi, 1915; vol.2: pp.cccxxxvii-dxcix, 1-64, 233 figs., 1929.

1916a. "Lepidoptera in Nassonov's Zoological Collection of Hydrographic Expedition to the Arctic Ocean." (In Russ.) Ann. Mus. Zool. St. Petersburg.

1916b. "On caterpillar of Amorpha tremulae Tr." (In Russ.) Rev. Russe d'Ent., vol.16.

1917a. "Contributions to the morphology of the genital apparatus in Lepidoptera. Some cases of gynandromorphism." (In Russ.) Ibid., vol.16: pp.151-191, 19 figs.

1917b. "On the classification of the family Danaidae (Pieridae auct.)." (In Russ.). Ibid., vol.17.

1921. "On taxonomic conceptions and efforts for their use on the basis of morphological data." (In Russ. & English.) Ibid., vol.17: pp.53-80.

1925. "Some new Eastern and American elements in the fauna of Lepidoptera of Polar Europe." Compt. Rend. Acad. Sci. U.R.S.S. (A), 1925: pp.119-122.

1926. "The morphology of copulatory structures in some cases of gynandromorphism in Lepidoptera." Biol. Bull. vol.51: pp.245-256, 10 figs.

1928. "Oligamatites martynovi, gen. et sp.nn., a fossil Amatid Lepidopteron from the Oligocene beds of Central Asia." (In English.) Compt. Rend. Acad. Sci. U.R.S.S. (A), 1928: pp.431-436, 1 fig.

1929a. "The cycle of development and morphology of Malacodea regelaria Tengstr. in comparison with European species of Operophthera Hb. on the question of micropterism." (In Russ.) Rev. Russe d'Ent., vol.23: pp.11-31, 4 pls., 3 figs.

1929b. "Sur le manque de quelques éléments dans la faune des Lépidoptères de la Crimée." (In Russ.) Compt. Rend. Acad. Sci. U.R.S.S., 1929: pp.321-326.

1930a. "Dépendance entre la distribution géographique des Asciidae (Lepidoptera) et la distribution ainsi que la constitution chimique de leur plantes nourricières." (In Russ.) Ann. Mus. Zool. Acad. Leningrad, vol.31: pp.49-63.

1930b. "On the absence of certain elements from the Lepidopterous fauna of the Crimea." Entomologist, vol.63: pp.103-106, 128-132.

1930c. "Abhangigkeit der geographischen Verbreitung der Weisslinge, Asciidae, von der Verbreitung ihre Futterpflanzen und der chemischen Zusammen setzung der letzteren." (In German). Zeitschr. Morph. Oekol. Tiere, vol.17: pp.778-794.

1931. "On the systematic position of the genus Davidiana Obth. (Lepidoptera, Papilionoidea)." (In Russ.) Ann. Mus. Zool. Acad. Leningrad, vol.31: pp.347-358, 4 pls.

1935a. "The origin of the Lepidopterous fauna of Arctic Eurasia (Prelim. note)." Arctica, vol.3: pp.115-136.

1935b. Transl. of Wigglesworth, V.B., The Principles of Insect Physiology. (In Russ.)

1938. "The Arctic fauna of Eurasia and its origin." (In Russ.) Bull. Acad. Sci. U.R.S.S., Ser. Biol., 1938: pp.105-115; Trav. Inst. Zool. Acad. Sci. U.R.S.S., vol.5: pp.1-85.

1941. "A Revision of the Amber Lepidoptera." (In Russ. & English.) Édition Acad. Sci. U.R.S.S. (Moscow): 135 pp., 31 pls.

BOOK REVIEWS

13. The Migration of Butterflies by C.B. Williams*

Readers of the Lep. News who had not already known of Dr. Williams as the leading world authority on butterfly migration met him through his article in the preceding issue of the News (pp.17-18). The following issue will contain his second article.

In the introduction to his book, Dr. Williams states the objects as follows (pp.2-3):

"Firstly, to establish by force of evidence, the reality and especially the wilful nature of the unidirectional flights.

"Secondly, by collecting all available records of such flights, to try and discover the actual facts of the case with regard to as many species as possible.

"Thirdly, to trace the connection between these flights and the periodic changes in distribution area.

"Fourthly, to compare the combined phenomena, for which I believe the world 'migration' can be used without any undue misapplication, with the somewhat similar habits found in other insects, birds, fishes and some mammals and to see to what extent they resemble or differ from each other.

"And finally, to discuss the possible causes, both original and immediate, and the meaning and results of these phenomena."

Conclusions are developed convincingly on each of these points except the third, for which the information available seems to be insufficient.

Migrations are classed as: (a) those with a return flight, which may occur on the same day (see Ehrlich, Lep. News 2: p.92 - Papilio glaucus), later in the same flight (Catopsilia spp.), or at a different season (Danaus plexippus); (b)those without a return flight, with one migration season in a year(Pieris brassicae) or with two(Papilio polytes).

All known published records of butterfly migration in all parts of the world are set forth systematically and geographically in eleven chapters, with 1272 records of 214 species. Records and species are overwhelmingly most numerous for Pieridae and Nymphalidae, with Papilionidae, Lycaenidae, and Hesperiidae weakly represented. Pieris brassicae, Danaus plexippus, and Vanessa cardui are the champion migrants. The migration of moths is considered in one chapter. The last seven chapters are devoted to general discussions. A valuable bibliography occupies 27 pages.

Every butterfly collector who is interested in the meaning of field observations will find this a frequently consulted volume for his bookshelf.

C.L. Remington

* Pp. 473; 71 figs. 1930. Edinburgh and London (Oliver & Boyd). U.S.A. agents: Stechert-Hafner, Inc., 31 East 10th St., New York 3, N.Y. Price, new, about $3.75 net.

ON THE PRIORITY OF CTENUCHIDAE KIRBY, 1837

In vol.2: p.103, of The Lepidopterists' News (1948), S.G. Kiriakoff tries to justify the validity of AMATIDAE over CTENUCHIDAE, quoting several of the Rules in support of his opinion. It is true the Rules do not mention the chronological priority of family names, but for quite a long time, entomologists, not to mention zoologists in other fields, have adopted certain provisional rules based on common sense as a working basis for their research in Systematics. The general trend seems to be the retaining of the name first used, as long as its formation was correct, thus extending the concept used in genera and species.

In our case, we have the following historical outlay:

1) Snellen, 1867, proposed the family name SYNTOMIDAE with Syntomis as its type genus. Syntomis, however, became a synonym of Amata, and on this account the name AMATIDAE was proposed by Jansen, 1917, as a substitute to SYNTOMIDAE.

2) Before Jansen, however, Neumoegen & Dyar, 1893, had proposed the name EUCHROMIIDAE, having Euchromia as the type genus. This name of course could not prevail in relation to SYNTOMIDAE, but certainly had priority on AMATIDAE.

3) But before all other authors, Kirby, 1837, had published the name CTENUCHIDAE having Ctenucha as its type genus.

Thus, we have three genera in the same family, originating three family names, all of them constructed in accordance to Rule 4 of the Code.

Ctenucha -- CTENUCHIDAE Kirby, 1837
Euchromia -- EUCHROMIIDAE Neumoegen & Dyar, 1893
Amata (= Syntomis) -- AMATIDAE Jansen, 1917
(= SYNTOMIDAE Snellen, 1867)

On a priority basis, no valid reason supports AMATIDAE as the name for this family. In the case of Ctenucha being split from the group, EUCHROMIIDAE would be considered as the following available name, and only the remote possibility of Euchromia also being split from the group would leave AMATIDAE as the remaining available name, as desired by Kiriakoff.

Supposing these genera had originated three distinct families, in their subsequent lumping no zoologist would for a moment think of using any but the oldest name.

I would recommend, on this subject, the very useful paper by R.F. d'Almeida- "Sobre a nomenclatura de alguns grupos superiores da ordem Lepidoptera. 2a. Nota: Familias Lasiocampidae, Lymantriidae, Mimallonidae e Uraniidae e superfamilia Arctioidea." Arquiv. Mus. Paranaense, Curitiba, Brasil, vol.3: pp.131-143, 1943 - where this question is very thoroughly examined, and based on a quite extensive bibliography. Most probably this work has been overlooked by Kiriakoff.

Lauro P. Travassos Fº
São Paulo, Brasil

RECENT LITERATURE ON LEPIDOPTERA

53. Alibert, H., "Note sur un nouvel insecte vivant sur goyavier en Côte d'Ivoire." Agron. Trop., vol.2: pp.69-71, 3 figs. 1947. [Abstract in Rev. App. Ent. (A), vol.36: pp.389-390.] Pesmeocraera varia (Notodont.): all stages described; notes on habits. (P.B.)

54. Bentick, G.A., "Bijzondere vangsten van Lepidoptera." (Captures of rare Lepidoptera.) (In Dutch.) Tijdschr. v. Ent., vol.90; Verslag: pp.43-44. 1 Nov. 1948. 10 rare species captured in Holland in 1947, of which Lithocolletis padella and true Caloptilia elongella (formerly C. betulicola has been erroneously recorded under latter name) are new for the fauna of Holland. (A.D.)

55. Berger, L.A., "Remarques sur la faune belge." (In French). Lambillionea, vol.49: pp.15-18. Feb. 1949. Notes on several butterflies and moths in Belgium.

56. Berger, L.A. & M. Fontaine, "Une espèce méconnue du genre Colias F." (In French). Lambillionea, vol.47: pp.91-98; vol.48: pp.12-15, 21-24, 90-110, 1 pl. Dec. 1947, Feb., Apr., Dec. 1948. For very many years two distinct spp. have gone under name of Colias hyale. This remarkable paper contrasts crisply and clearly the new species with hyale on basis of adult color and pattern of wings and body, adult odor, environment, host plants (always Hippocrepis comosa for n.sp., many legumes for C. hyale), ovum, larva, pupa. N.sp. known from N.W. France and S. England to Ural Mts. and Persia. C. hyale does not occur as far south, but reaches eastern Siberia. Name selected for n.sp. is C. alfacariensis Ribbe, 1905, presumably used for local form. The 1948 revision of the International Rules may make possible another name. Excellent photos of n.sp. and hyale. One of the most thorough, interesting papers on butterflies in many years.

57. Berthet,H.,"Note sur Parastichtis (Orthosia auct.) suspecta Hbn. (ineris Germ.)." (In French.) Rev. franç. Lépid., vol.11: pp.334-335. June 1948. Records specimens from Barlelonnette and Étages-en-Oisans.

58. Betz, J.-T., "Assiste-t-on, actuellement à une extension de l'aire de dispersion d'Araschnia levana, L.?" (In French.) Rev. franç. Lépid., vol.11: pp. 330-334. June 1948. Evidence of northward extension of range of A. levana in N. France.

59. Cleu, H., "Oxycesta serratae Zerny. Noctuidae nouvelle pour la faune de France." (In French.) Rev. franç. Lépid., vol.11: pp.329-330. June 1948.

60. Dufrane,Abel, "Lépidoptères du Kivu." (In French). Bull. & Ann. Soc. Ent. Belgique, vol.84: pp.160-168. 1948. 4th of a series on Kivu(Africa). Gives names to 5 variants. Describes briefly as new (races?): Anapheis calypso dentigera f. tsangerensis (sic!); Appias phaola r. intermedia, Mylothris r. rhodope r. mauanensis (sic!); no figures. Uses extensive footnotes to reply to criticisms of Berger (see Lep.News 3: p.21, #18) and there names new form.

61. Dufrane, Abel, "Zygènes de la faune belge." (In French). Lambillionea, vol.49: pp.5-7. Feb. 1949. Describes as new [Zygaena] filipendulae ssp. jottrandi (Harmignies, Belgium); no figs. New records: Z. filipendulae ssp. limmenica.

62. Hering,M., "Les mines de Lithocolletis des Alnus." (In French.) Rev. franç. Lépid., vol.11: pp.318-323, 5 figs. June 1948. Describes and gives key to leaf mines of L. stettinensis, strigulatella, suaveolentis,alpina and hauderella, froelichiella, klemannella, rajella, with figs. of last 3. All feed on Alder (Alnus); lists 10 spp.of Alnus, with Lithocolletis known on each. A great aid to field microlepidopterists!

63. Hovanitz, William, "Ecological Segregation of Inter-Fertile Species of Colias." Ecology, vol.29: pp.461-469, 1 fig. Oct. 1948. Found in S. Ohio, S. Michigan, N. Illinois: C. philodice commonest in red clover fields and C.eurytheme commonest in alfalfa fields, with males being more selective than females. Cutting an alfalfa field changed proportions of species.

64. Janmoulle, E., "Espèces nouvelles pour la faune belge." (In French.) Lambillionea, vol.48: pp.50, 82-83. Aug., Dec. 1948. Records: Conchylis vectisana, Grapholitha micrograminana, Teleia saltuum, Tinea ditella.

65. Kiriakoff, S.G., "Recherches sur les organes tympaniques des Lépidoptères en rapport avec la classification." (In French). Bull. & Ann. Soc. Ent. Belgique, vol.84: pp.231-276, 3 pls. 1948. Investigation of phylogenetic significance of tympanic organs in family Ctenuchidae. 130 spp. of 62 genera studied by dissection, following technique of A.G. Richards (technique given); organs of 75 spp. described in some detail and 15 figured. Latin terminology proposed for 11 common structures of tympanum. Three distinct groupings of tympanal structures reported: 1) rudimentary type - Old World genera plus Chrysocale; 2) well-developed organs of "noctuide" type - New World genera plus Euchromia; 3) well-developed organs with a vibrating membrane ("tympan du type à timbale") - African genera. Latter type is so different from first two and so uniform for latter genera that new family THYRETIDAE (type - Thyretes) is erected. New genus ASTRIDIA (type - A. angustata Moschler) based on specialized tympanum (in type 2, above). A significant paper!

66. Legras, L., "Au jardin des Hespérides." (In French.) Rev. franç. Lépid., vol.11: pp.315-317. June 1948. Notes on Lepidoptera collecting at Comps, S. France.

67. Lempke, B.J., "Bestrijding van schimmel bij kweeken." (Control of mould in breeding experiments.) (In Dutch.) Entom. Berichten, vol.12: pp.291-292. 1 Nov. 1948. The author recommends a method published by R.L.S. Ford, Proc. Roy. Ent. Soc. Lond.(A) vol.22: pp.86-88, 1947, and also demonstrated to him by Dr. H.B.D. Kettlewell, England; this method is especially useful in breeding on a large scale, e.g., in experiments with genetics of Lepidoptera. Larvae on a branch of the food plant are covered with a bag of mosquito netting and placed in a jar with water on the bottom of a wooden vessel which has been sprayed with a 3% common salt solution; this prevents development of mould and reduced mortality of larvae considerably. (A.D.) (See Lep. News 2: p.19, no.54).

68. MacGillavry, D., "Insecten op Amerikaansche eik" (Insects of American oak = Quercus borealis Mign. v. maxima Sarg.) (In Dutch). Entom. Berichten, vol.12: pp.289-291. 1 Nov. 1948. Phalaera bucephala and Orthosia incerta recorded on this food plant in Holland. (A.D.)

69. Meer Mohr, J.C. van der, "Some notes on the life history of the Maize Borer." Chronica Naturae, vol. 105: pp.74-78. March 1949. Pyrausta nubilalis (Pyalidae) is a serious pest of maize at the E. coast of Sumatra. Development covers 1½ months, occurrence is continuous throughout the year. List of wild food plants is given. Parasites are of very minor importance. (A.D.)

70. Meer Mohr, J.C. van der, "A note on the Green Rice Moth, Doloessa viridis Zell." Chronica Naturae, vol.105: pp.79-80. D. v. (= Thagora figurana Walk.) is a pest of stored rice and maize at the E. coast of Sumatra. A short description of stages and remarks on feeding habits and development. (A.D.)

71. Munroe, Eugene, "A new genus of Nymphalidae and its affinities (Lepidoptera, Rhopalocera)." Journ. N.Y. Ent. Soc., vol.57: pp.67-78. Mar. 1949. Reviews the genera Ergolis, Laringa, Eurytela, Byblis, Neptidopsis, Mesoxantha, Mestra, Vila, and Biblis, and gives their generic synonymies. The author erects a new genus, Archimestra, with generotype Argynnis teleboas Menetries, (1832). Query as to whether Cystineura can be considered a synonym of Mestra, since they are both monotypical and their generotypes are not conspecific. (C.dP.)

72. Nabokov, V., "A New Species of Cyclargus Nabokov (Lycaenidae, Lepidoptera)." Entomologist, vol.81: pp.273-280, 11 figs. Dec. 1948. Describes as new C. erembis (Little Cayman Is.). Wing pattern, ♂ genitalia, scales figured in detail. Predicts erembis will be found in Cuba sympatrically with C. ammon.

73. Nabokov, V.,"The Nearctic Members of the Genus Lycaeides Hübner (Lycaenidae, Lepidoptera)." Bull. Mus. Comp. Zool., vol.101: pp.479-541, 9 pls. Feb. 1949. Lycaeides, in restricted sense, limited to 3 spp.(nowhere clearly distinguished!): argyrognomen - Holarctic;ismenias - Palearctic; melissa - Nearctic. Describes in great detail,with photos, Nearctic races of argyrognomen as follows: anna, ricei, lotis, alaskensis,scudderi, aster, ferniensis, atrapraetextus, sublivens (subsp. nov. - Telluride, Colo.), longinus (subsp. nov. - Jackson Hole, Wyo.); of melissa as follows: melissa, pseudosamuelis (subsp.nov. - Pitkin Co., Colo.), inyoensis, annetta, samuelis. Very detailed synonymies. Also photos of num. Palearctic races of ismenias and argyrognomen. Clearly the result of patient painstaking work,but difficult or impossible to understand completely because of lack of yes-or-no summaries or keys.

74. Picard, J., "Nouvelles races d'Hesperiidae françaises." (In French.) Rev. franç. Lépid., vol.11: pp.324-328. June 1948. Describes as new skippers from France: Carcharodus alceae race corsicus(Calvi, Corsica),Reverdinus lavatherae r. pyrenaicus(Gèdre), Pyrgus alveus r. lutetianus(Forêt de Saint-Germain), P. bellieri r. adkini (Bagnol-les-Bains), Heteropterus morpheus r. vasconiae (Biarritz). No figures.

75. Poivre, R., "Notes sur quelques espèces capturées au plateau d'Assy (Haute-Savoie)." (In French.) Rev. franç. Lépid., vol.11: pp.344-347. Sept. 1948. Records of 6 spp. of moths.

76. Praviel, G., "Augiades sylvanus Esper ssp. nicaeensis nov." (In French.) Rev. franç. Lépid., vol. 11: p.324. June 1948. Describes Maritime Alps sylvanus as new race nicaeensis (Nice). No figure.

77. Rupert, Laurence R.,"A revision of the North American species of the genus Plagodis (Lepidoptera,Geometridae, Ennominae)." Journ. N.Y. Ent. Soc.,vol.57: pp.19-48,pls.1-5. Mar. 1949. Discusses and figures, including the male and female genitalia and some preparatory stages, P. serinaria, P. kuetzingi, P. purpuraria, P. phlogosaria, P. fervidaria, P. alcoolaria, and some subspecific and season forms. P. phlogosaria iris is proposed as a new race (subspecies) from Armdale, Nova Scotia. Holotype and allotype in the U.S.N.M. (C.dP.)

78. Rütimeyer,E., "Mise au point au sujet de mon article sur Coenonympha leander var. gallica m. et report de cette variété à Coenonympha iphis." (In French.) Rev. franç. Lépid., vol.11: pp.312-315. June 1948. Agrees that his race gallica should belong to C. iphis instead of C. leander, gives table for distinguishing the 2 spp.

79. Sarlet, L., "Un cas d'atavisme intéressant chez la femelle d'Erannis leucophaearia Schiff." (In French.) Lambillionea, vol.48: pp.78-79. Oct. 1948. Remarkable specimen of (normally wingless) female of this species, showing much more wing rudiment than usual.

80. Sevastopulo, D.G., "The colour relationship between certain pupae and their surroundings." Proc. Roy. Ent. Soc. London (A), vol.23: pp.93-95. 28 Dec. 1948. Reports tests on Papilio polytes, P. demoleus and Danaus chrysippus, to determine effect, if any, of background color on pupal color. Results negative. (P.B.)

81. Storace, L., "Quelques observations sur l'exerge antinorii Oberthür de Papilio dardanus Brown." (In French.) Lambillionea, vol.48: pp.65-73. Oct. 1948. Discussion of this African Papilio.

82. Toxopeus, L.J., "Notes on Lymantriidae, with a partial revision of the genus Redoa WLK. (Results of the Third Archbold Expedition 1938-1939)". (In English). Treubia, vol.19: pp.429-481. 1948. Divided in 8 chapters as follows. 1. Notes on the family name Lymantriidae. 2. An annotated list of the species of Lymantria from Java: 16 spp. recorded of which 4 for the first time from this island; new are: L. capnodes bisextilis, L. vasatrix; L. marginalis harimuda Roepke is redescribed. 3. Synonymy of Lymantria minora Van Eecke: synonyms are Dura panthera v. Eecke and L. pendelburyi Coll. 4. Notes on the genus Imaus Moore and related genera; new PSILOCHIRA g.n., P. lineata nycthemera subsp. n., (Borneo) Imaus mundus collenettei subsp.n. (Java). 5. A tabular review of Leucoma group of genera; a key for 13 genera, new is CANDIDATA (Amboina). 6. A provisional tubular review of the oriental species of the genus Redoa Walk. 57 spp. and 1 subsp. are reviewed, of which are new: from Sumatra: R. diatreta, byssina; from Borneo: isabella, clavigera, flaminea, sparsa, linteola, arborchristi, prasioneura, rhopica, salebrosa, corrugata, adusta, satinata, erasmia; from Java: salsa, phrika, gedea, galene, galanthina, velutina; from New Guinea: flaccida, palea. 7. Nygmia icilia (Stoll.) and allied forms: distribution of 9 Indo-Malayan subspp. 8. Five new genera of the Nygmia group: PRONYGMIA, (India, Java) with P. xanthopera punctata subsp.n., (Java); MICCOTROGIA, (Malaya, Java); MICRONYGMIA (Malaya, Sumatra, Borneo), with M. oreolinta sp.n. (Java); XANTHONYGMIA (Borneo) with X. oculata sp.n. (Borneo); BRADYTERA (Java, Sumatra). Photographs are given of Imaida sinuata sp.n., Imaus mundus collenettei subsp.n., Lymantria vastatrix sp.n., L. ossea sp.n., L. minora v. Eecke, neallotype ♀. Neurations of Psilochira lineata nycthemera and of Imaida sinuata are figured. (A.D.)

83. Travassos, Lauro, "Contribução ao Conhecimento dos 'Arctiidae'. XVI. (Lepidoptera, Heterocera)." Rev. Brasil. Biol., vol.8: pp.493-504, 6 figs. Dec. 1948. Deals with the genus Phegoptera. A review of the taxonomic history of the genus is given. The genus itself, and the typical species, P. histrionica, are described in great detail, with figures of wing pattern, adults of both sexes, venation, genitalia, tarsi, and palpi. (P.B.)

84. Viette, P., "Contribution a l'étude des Micropterygidae (2e note). Descriptions des génitalia mâles de quelques espèces de Micropteryx." (In French.) Rev. franç. Lépid., vol.11: pp.340-344, 6 figs. Describes and figures ♂ genitalia of M. aureoviridella, imperfectella, islamella, myrtella, octopunctella.

85. Wellington, E.F., "Artificial Medium for Larval Rearing." Forest Insect Investigations Bi-mon. Prog. Rept., vol.5: p.2. Jan.-Feb. 1949. Medium for rearing Choristoneura fumiferana and 3 other spp. with similar habits. Thrive on hardened slabs of foliage-water suspension mixed in Waring Blendor with hot agar and "Mycoban" (micro-organism inhibitor). Lepidoptera feeding externally on foliage will not take the medium. A most significant technique for large-scale rearing work, such as genetics!

NOTICES BY MEMBERS

All members may use this column to advertise their offerings and needs in Lepidoptera. There is no cost for this service. Unless withdrawn sooner by the member, each notice will appear in TWO consecutive issues.

Wanted: information on the distribution of Utah LYCAENIDAE in various collections. Please send notices of availability of material. John C. Downey, Biology Dept., Univ. of Utah, Salt Lake City 1, Utah.

AGENT WANTED IN U.S.A. who can sell our whole 1949 catch, to be collected in faunistically rich Khasi and Naga Hills of northern India: including butterflies and many other orders of insects. Total will be about 1,000,000 specimens. Please contact us for our terms. Himalayan Butterfly Co., Shillong, Khasi Hills, INDIA.

Have a quantity of Urania riphaeus from Madagascar, first-quality papered specimens, for exchange by 100 or 1000. Also have Morpho amathonte, menelaus, aega, etc. by one or a dozen, and thousands of other butterflies for exchange, for what have you? Butterfly World Supply House, 289 E. 98th St., Brooklyn 12, N.Y.

All sizes of black steel insect pins from Czechoslovakia for sale at $3.00 per 1000 or $25.00 for 10,000. Dr. H. Wilcke, Kössen/Tyrol, No. 199, AUSTRIA.

For sale: "THE MACROLEPIDOPTERA OF THE WORLD" by A. Seitz. Vol.5, the North & South American butterflies in four volumes; bound in buckram. Vol.9, the Indo-Australian butterflies in two volumes; bound in buckram and calf. Both sets complete, all plates intact, in GOOD condition. Price $250.00.
M. Spelman, 2781 Grand Concourse, New York 58, N.Y.

Wanted immediately for generic revision, all species of genus Annaphila Grt. EXCEPTING A. divinula Grt., A. decia Grt., A. depicta Grt., and A. diva Grt. Material from Arizona, New Mexico, and Texas especially needed. Distributional, ecological, and biological data desired. Offer in exchange Rhopalocera and Heterocera of So. and Central Calif. C.I. Smith, Dept. of Entomology & Parasitology, Agriculture Hall, Room 112, University of California, Berkeley 4, Calif.

For sale: European races of PARNASSIIDAE in papers or mounted with exact data and in good condition. P. apollo L. var brittingeri R. a. R. ♂♂ (= chetus Fruhst.), P. mnemosyne L. var. hartmanni Stdfs. ♂♀ and ab. melaina Honr. ♀ and ab. umbratilis Fruhst. ♀ (extremely melanistic forms). Supply limited, order early. Dr. W.J. Reinthal, Dept. of Zool. Sciences, University of Oklahoma, Norman, Okla.

Subscriptions to Entomologisches Nachrichtenblatt, a German language mimeographed monthly periodical devoted largely to Lepidoptera, are offered by its editor in exchange for butterfly and moth pupae or for Lepidoptera literature. Write: Adrian Lüthi, Inneres Sommerhaus, Burgdorf, SWITZERLAND.

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Wanted: COPIES OF THE DATA from specimens of the following species and races of PAPILIO:

P. bairdii hollandii, P. b. brucei
P. nitra, P. n. kahlii
P. machaon aliaska, P. m. hudsonianus, P. m. dodi

Will be glad to supply data from any species of Rhopalocera to be found in the collection of the American Museum of Natural History in return.
Paul R. Ehrlich, 538 Academy St., Maplewood, N.J.

Wanted for cash or exchange: EUPHYDRYAS of the world in series. Also Nearctic MITOURA in series.
D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

4,000 Geometridae, Arctiidae, Noctuidae, Bombycidae, Hepialidae of Austrian Alps pinned but unspread need to be sold to provide space for 1949 collecting. Especially Acronicta, Euxoa, Rhyacia, Dianthoecia, Cosmia, Anarta, Acidalia, Ortholita, Boarmia, Biston, Gnophos, and many others. Each for 15¢, including the very good species. 25% discount for orders over 1000 specimens. Specimens perfect and with full data.
Dr. H. Wilcke, Kössen/Tyrol, No. 199, AUSTRIA.

Wanted to buy: THE MOTH BOOK, by W.J. Holland (1937), in good condition.
Mrs. Emily Henriksen, Orcas Island, East Sound, Wash.

LIVING MATERIAL

The News will welcome especially notices concerning the exchange or sale of Lepidoptera eggs, larvae, and pupae, hoping to revive the old interest in rearing and to re-emphasize the importance of studying the immature stages. Contributors are urged to include accurate locality data with all material sent.

Living OVA for sale or exchange (in season): Citheronia regalis, Eacles imperialis, Samia gloveri, hybrid cecropia-gloveri, Actias luna, Automeris io, Telea polyphemus. Duke Downey, 51 W. 4th St., Sheridan Wyo.

Desire to purchase or exchange living Saturniid pupae of the world. Have limited number Rothschildia forbesi and/or orizaba pupae for sale or preferably in exchange.
R.L. Halbert, 1201 W. 30th St., Los Angeles 7, Calif.

Contacts desired to obtain live pupae of Sphingidae and Saturniidae, and eggs of Catocalinae. Dr. v. Froreich, Postschiesfach 431, Aachen, GERMANY (British Zone).

Eggs of Actias luna for sale in season by the 100 or 1000. M. Eugene Smith, Rt. #2, Newnan, Georgia.

MAX MINOR PEET

Dr. Max Minor Peet, world famous surgeon, died suddenly at Ann Arbor, Mich., Mar.25, 1949. Between assignments in medicine he found time to do much creditable work in zoology, being especially widely known as an ornithologist. His collections of Lepidoptera in the University of Michigan Museum add much to our knowledge of the fauna of some of the little-known parts of the State.

Ralph Beebe
Ecorse, Michigan

Edward Coher has recently left Massachusetts to spend a year on entomological research in Brazil, centering his activities at São Paulo.

QUESTIONS AND ANSWERS

Q. "Are there any collection records of Megathymus ursus since the types were collected almost 50 years ago?" (Ed. Note: Prof. Forbes referred this question to Mr. E.L. Bell.)

A. As far as I know there are no published records of further captures of Megathymus ursus Poling since the original description in 1902, other than the mention by Barnes & McDunnough (1912. Contributions, 1 (3),pp.36 and 43) in the collection of Mr. O.C. Poling. However there are three specimens in the collection of the United States National Museum, Washington, D.C., all of them females, and Mr. W.D. Field of that Museum has kindly sent to me the data accompanying them. The type specimen upon which Poling based his description of ursus bears the locality label "So. Arizona Poling" without date of capture; another specimen bears the locality label "Redington Ariz.", also without date of capture; the third specimen bears the locality label "Santa Catalina Mts. Ariz. Pinal Co." and the date of capture label "Aug. 16-23". Barnes & McDunnough state that as far as they knew then, approximately ten years after the description of ursus, there were only two specimens in existence, the type in the Barnes collection and another specimen in the collection of Mr. O.C. Poling and that no individuals had been observed since 1903. They also say that between 1901 and 1903 some 8 or 10 individuals were observed in the beginning of September and that of these but two were captured, the type in the Barnes collection and the specimen in the Poling collection. Thus the third specimen mentioned above having been captured in August may have been taken subsequent to the publication of the Barnes & McDunnough paper in 1912, at any rate apparently it was not known to them at the time.

Ernest L. Bell

Q. "For some time I have tried to find Lepidoptera larvae feeding on "Club Mosses" (Lycopodium) without any luck. Are any species known to feed on these plants?"

A. I know only Sparganothis lycopodiana Kft. which is not structurally separable from S. sulfureana Clem., and may be merely a color form. Probably a few other caterpillars of the groups reported as feeding on "mosses and lichens" might be found occasionally.

W.T.M. Forbes

The biographical notes and list of publications of Professor Kusnezov presented by Mr. Borodin on pp. 29-31 were given an unusually large portion of this issue of the Lep. News because scientific publications of Russia, which may contain an account of Kusnezov, have a very small world distribution and in recent years have been almost entirely in the Russian language, probably not understood by most News readers. In the interests of international lepidopterology we consider a proper account of Kusnezov important. (See vol.2: p.110).

C.L.R.

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ADDITIONS TO THE MEMBERSHIP LIST

Beebe, William (Dr.), Zoological Park, New York 60, N.Y. RHOP. MACRO. Ecology, Life History. Coll.
FROEMEL, E.A., Columbus, Nebraska. RHOP. MACRO: esp. Catocala. Coll. Ex. Buy.
Gatti, Arthur, 63 W. Seventh St., Mt. Vernon, N.Y. RHOP: esp. Papilionidae, Morphidae, Brassolidae, Nymphalidae, Amathusidae. Coll. Ex. Buy. Sell.
Jones, Frank Morton (Dr.), 2000 Riverview Ave., Wilmington, Dela. LEPID: esp.Psychidae. Coll.Ex.Buy.
Kessler, Francis D., 333 Elmwood Ave., Buffalo 9, N.Y. MACRO: esp. Saturniidae. Life History. Buy.
Leuschner, Ronald, 1172 S. Wenonah Ave., Oak Park, Ill. RHOP: esp. Speyeria, Brenthis, Melitaea. Coll. Ex. MACRO.
Sicher, Harry (Dr.), Loyola Univ.School of Dentistry, 1757 W. Harrison St., Chicago 12, Ill.
Stein, George L., c/o Laue, 706 Greythorne Rd., Wynnewood, Pa. RHOP: esp. Papilionidae,Morphidae, Nymphalidae. MACRO:esp. Castniidae, Saturniidae, Sphingidae. Life History. Coll. Ex. Buy. Sell.

CHANGES OF ADDRESS

Adelphe, Rev. Brother, École Supérieure Richard, 200 Rue Galt, Verdun, P.Q., CANADA.
Crystal, Bruce W., 7955 "F" St., Dexter, Mich.
Lewallen, L.L., 3530 Myers St., Arlington, Calif.
McElvare, R.R., 26 Bogart Ave., Port Washington,N.Y.
Robinson, P.F., 115 Union St., Westfield, Mass.
Smalley, S.B., 1079 Asbury Rd., Cincinnati 30, Ohio.
Sweetman, H.E., 300 N.Dakota Ave., Sioux Falls, S.D.

THE LEPIDOPTERISTS' NEWS
The monthly periodical of the Lepidopterists' Society

Membership is open to all persons interested in any aspect of the study of butterflies and moths. The 1949 dues, including subscription to the NEWS, are $2.00 for Regular Membership and $4.00 or more for Sustaining Membership. Please make remittances payable to Charles L. Remington. Price for Vol. 2 is $2.00. No complete sets of Vol. 1 are available.

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The Lepidopterists' News

THE MONTHLY NEWSLETTER OF THE LEPIDOPTERISTS' SOCIETY
c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

Volume III | April-May 1949 | Numbers 4-5

BOOKS ON LEPIDOPTERA IN PRINT

LARVAE OF INSECTS. Pt.I. LEPIDOPTERA AND HYMENOPTERA. By Alvah Peterson. Published by author; Columbus, Ohio. 1948. 315 pp., 84 full page figs. (Lithoprinted, cloth bound, 8" x 10 1/2"). Available from: Prof. Alvah Peterson, Dept. of Zoology-Entomology, Ohio State University, Columbus 10, Ohio, U.S.A., for $5.00, postpaid.

This is the first of two projected volumes on the larvae of all the orders of holometabolous insects (see News: p.46) in the Nearctic Region. Pt.1 contains three sections: the introduction to the immature insects of all orders; detailed treatment of the Lepidoptera; and detailed treatment of the plant-feeding Hymenoptera (Sawflies and a few Chalcids).

The general section describes techniques for collecting, killing, preserving, and inflating larvae and gives keys to the immature stages of the orders of insects. The keys throughout the volume are well illustrated with large, simple drawings. There is a general bibliography on immature insects with 87 titles.

The second section, on Lepidoptera, occupies pages 60-236 of which 58 pages are filled with figures and 58 with explanations of figures. A lucid introduction to the characters of larvae of Lepidoptera is followed by a tabular comparison of the systems of S.B. Fracker, W.T.M. Forbes, and Carl Heinrich for naming the setae. The keys, which include nearly all Nearctic families of Lepidoptera, are based on those of Fracker(1930) and of course rely entirely on structural characters, such as setae, horns, spiracles, glands, crochets, and relative sizes. No attempt is made to cover early instars. After the keys the families, in alphabetical order, are described and their habits noted. A list of "Some Common, Important or Unusual Species" shows the species actually studied in preparing the book. The excellent, practical drawings illustrate essential characters of a very large number of species in nearly all families. The bibliography of Nearctic Lepidoptera larvae contains over 200 titles.

The final section (pages 237-277 and 12 plates) deals with Hymenoptera larvae found on plants.

The end of the volume has an extensive glossary of terms, host indices, and an index of all common and scientific names in the volume.

This is a valuable manual of identification for anyone interested in Lepidoptera larvae and having a microscope available.

BUTTERFLY LIVES. By S. Beaufoy. Collins; London. 1947. 128 pp., 191 photos. Available from: Collins, 14 St. James's Place, London, England; listed at 12s.6d net. (= $2.50 U.S.A.).

Never before have we found such a large collection of superb photographs of butterflies and their early stages. Mr. Beaufoy exhibits real skill in rearing and finding the stages of the butterflies he figures, but the wonderful photographs make reading this book an exceptional pleasure. It certainly stands far above most popular books on butterflies.

Mr. Beaufoy has chosen for the book 22 species of British butterflies, with representatives of all major groups and with several species having particularly interesting life histories, habits, or distribution. The delightfully written text on each species, on a simple plane, is accompanied by about eight photographs, usually illustrating all four stages of the life history, and often with several views of one stage or of different larval instars. The backgrounds are natural and add to the biological authenticity of the photographs. The scientific accuracy of the entire book has been assured by the collaboration of Dr. E.B. Ford.

Mr. Beaufoy hopes to give impetus to the hobby of photographing living butterflies and their early stages. He presents in the introduction his techniques for finding eggs, larvae, and pupae, for rearing them, and for photographing the insects. "Butterfly Lives" will bring pleasure to collectors and students of butterflies anywhere in the world.

The early signs are that 1949 may be a great migrating year for Lepidoptera in western North America. Commander J.L. Sperry reported (April) that the larvae of Celerio lineata "are so plentiful that it makes slippery travelling in parts of the desert" (S.Calif.). D.E. Parker found Vanessa cardui "in tremendous numbers" in the desert section around Little Rock, California. The importance of large numbers of observations from many localities during a migration cannot be overestimated. All collectors seeing unusual swarms, especially those moving, of the migrating Lepidoptera are urged to send letters or postcards to the News editor immediately, giving all possible details. It may then be possible to alert other potential observers. Consult the article by Dr. C.B. Williams on pp.17-18 of the February Lep. News for a list of the known migrant butterflies; these and the moths should be watched carefully. From June 25-July 31 the address of the News editor will be Eldora, Colorado.

CATALOGUE DES LÉPIDOPTÈRES DE FRANCE ET DE BELGIQUE: 2 vols. By Léon Lhomme. Published by author; France. Available from: L. Lhomme, Le Carriol (Lot), France.

This catalogue of the Lepidoptera of France and Belgium is a reference work of high quality. Its compiler, one of the world's ablest amateur zoologists, has now nearly completed publication of the final volume.

Volume I (800 pp.) deals with the Macrolepidoptera. It lists 1676 species. All parts have now appeared and the price is 600 francs.

Volume 2 (about 1200 pp.) covers the Microlepidoptera, of which there are 2665 species recorded. It is appearing in six fascicles, of which the first five have been published and the sixth was in press in March. The price for the entire volume is about 2000 francs.

The author, date, and generotype is given for every genus. Under each species is the following information: 1) references to recent works in any language, in which that species is described or figured; 2) detailed records of the distribution in France and Belgium and the periods of flight; 3)the host plants of the larva; and 4) for many species, notes on the habits of larvae and adults.

This is not a synonymical catalogue and the lack of synonymies detracts materially from its value. Presumably practical reasons required their omission.

Anyone interested in the Microlepidoptera will find the second volume frequently consulted. Students of the Macrolepidoptera whose interests include European species will wish to have the first volume on their bookshelves. The prices are reasonable and should be no deterrent.

[Just as this issue of the Lep. News was being made up for the printer we learned of the very recent passing of M. Lhomme. This is a great loss to lepidopterology. An engineer by profession, M. Lhomme has long served French entomology, not only by compiling the above Catalogue, but by his able editing of the Revue française de Lépidoptèrologie and his own original work. We have not yet heard who will carry on the Revue or the "Catalogue", but presumably orders addressed as above will continue to receive proper attention.]

THE CATERPILLARS OF THE BRITISH BUTTERFLIES, Including the Eggs, Chrysalids and Food-plants. By W. J. Stokoe & G. H. T. Stovin. Warne; London. 1944. 248 pp., 32 pls., figs. Available from: Frederick Warne & Co., Ltd.,London, England, or New York,N.Y., U.S.A. (bound, 10s.6d in England = $2.10).

This little book was prepared as a companion volume to South's The Butterflies of the British Isles. The species are arranged in phylogenetic sequence, but with the most specialized groups first. For each species there are notes giving: habits and distribution of the adults; the oviposition site; descriptions of the egg, larva (all instars), and pupa; larval habits; and all known food-plants. The descriptions of the life-history of the Monarch are quoted from Skudder (sic!). All the larvae are figured in color from the water-color drawings of J.C. Dollman and undoubtedly suffice for identification, but they are not very clear in most cases. The figures of the eggs and pupae are in black-and-white. The former are especially clear. A very useful feature of the book is a descriptive list, with simple drawings, of the 140 different food-plants and notations of the butterflies which feed on them.

The introductory chapters, Dr. Stovin's contribution to the book, consider "Instructions and Hints for Rearing Butterflies in Captivity" and "Reasons for Classification of Butterflies into Families."

It will surprise North American collectors to find that only 68 species of butterflies occur in the British Isles, whereas any one locality in the Nearctic Region probably has at least 50% more. Small wonder that British collectors have turned to gathering aberrations enthusiastically!

All European collectors should find this little volume useful, and the close similarity between most Palearctic and Nearctic butterflies makes it of interest anywhere in northern Asia and North America.

THE CATERPILLARS OF BRITISH MOTHS, Including the Eggs, Chrysalids and Food-plants. 2 volumes. By W. J. Stokoe & G. H. T. Stovin. Warne; London. 1948. 408 & 381 pp., 90 & 51 pls., figs. Available from: Frederick Warne & Co., Ltd., London, England, or New York, N.Y., U.S.A. (about $7.00 U.S.A.).

Like the butterfly book (see notice above) these little volumes will conveniently accompany South's work on the adults. Only the families of larger moths are included. The first volume deals with the families "Sphingidae to Brephidae", and the second volume is devoted to the Geometridae, Zygaenidae, Limacodidae, Cossidae, Sesiidae (Aegeriidae), and Hepialidae.

In the same manner as in the volume on butterfly caterpillars, there is an extensive list of food-plants, with descriptions and figures. Dr. Stovin has contributed a simple chapter on insect genetics.

For each species Mr. Stokoe gives: the habits and distribution of the adult moths; descriptions of the egg, larva, and sometimes pupa and cocoon; and the known food-plants. The figures of larvae are in color and are not very clear. Photographs and drawings of the eggs and pupae are much better.

Any collector of moths, at least in the Northern Hemisphere, will find this a handy reference manual.

C. L. Remington

Some other recent books previously reviewed:

1. BUTTERFLIES, by E.B. Ford (see Lep. News, vol.1: p.3). Available from: Collins, St. James's Place, London, ENGLAND, (about $5.00).
2. ATLAS DES LÉPIDOPTÈRES DE FRANCE ... HÉTÉROCÈRES, by C. Herbulot (see Lep. News, vol.2: p.88). Available from: Éditions N. Boubée, 3, Place St.-André-des-Arts, Paris VI^{e}, FRANCE, (350 francs).
3. LEPIDOPTERA OF NEW YORK AND NEIGHBORING STATES, Pt. II, by W.T.M. Forbes (see Lep. News, vol.3: pp.5-6). Available from: Roberts Hall, N.Y. State College of Agric.,Ithaca, N.Y.,U.S.A., ($1.50).

MIGRANT BUTTERFLIES OUTSIDE NORTH AMERICA

by C.B. Williams, Sc.D.
Rothamsted Experimental Station
Harpenden, England

In an earlier number of the Lepidopterists' News (vol.3: pp.17-18) I gave a short account of some of the problems facing the student of the Migration of Lepidoptera in North America. We know of migrations of butterflies in almost every country in the world, and the following is a survey of the more important species concerned and some of the problems outside your own continent.

In Britain, where we have had the advantage of a long series of amateur naturalists, in a relatively small area, for a hundred years or more, we know that about 17 of our 68 species of Rhopalocera are migrants. These species with a brief statement of their movements are as follows:-

PAPILIONIDAE:- Papilio machaon L.; we have a British race which is resident and confined to the fenlands of eastern England. At times 'Swallow-tails' are caught along the southern coast, and these have been found to be immigrants of the continental P. m. gorgonius, and not wanderers of our own race.

PIERIDAE:- Pieris brassicae L. migrates in great numbers towards the south in central Germany, usually at the end of July. Off-shoots of this movement cross the North Sea and the Channel and invade our E. and S.E. coast sometimes in millions. The species has also a large resident population in Britain which survives the winter. P. rapae L. has movements similar to the above but on a smaller scale. P. napi L. is only an occasional migrant.

Colias croceus Fourcr. and C. hyale L. are both visitors from the south which may breed here in the summer but do not normally survive the winter. In the first, which is the more frequent immigrant, there is some evidence of a return autumn flight.

Pontia daplidice L. is an occasional wanderer to our shores from France. In 1945 there was the biggest immigration ever recorded; over 500 adults were captured, and eggs, larvae and pupae recorded for the first time.

DANAIDAE:- In the past 80 years over 160 individuals of Danaus plexippus L. have been captured or seen in the British Isles. The food plant does not exist wild in Europe. All specimens examined have been of the North American race (see Williams et al, 1942).

NYMPHALIDAE:- Vanessa cardui L. is our greatest migrant and comes north nearly every year in the spring from the Mediterranean or North Africa. There is a summer breeding generation in Britain but very few survive the winter. V. atalanta L. has similar habits, but a small proportion regularly survive the winter.

Nymphalis antiopa L. is a regular autumn immigrant which comes to us from the east; very few survive our winter, and there is no record of any larva being found in this country. N. io L. and N. urticae L. have been recorded in migratory flights on the Continent but are regular residents in Britain. Argynnis lathonia L. is an occasional wanderer from the south which seldom if ever breeds here.

LYCAENIDAE:- Cosmolyce boeticus L., Everes argiades Pall., and Cyaniris semiargus Rott. (acis D. & S.) are all occasional immigrants from the south which seldom or never breed here. C. boeticus is a regular migrant in other parts of the world.

No Hesperiid has been recorded migrating in Europe.

About half of our Sphingidae, and an unknown number - probably at least 50 - of our other moths are also migrants.

The British immigrants are a very good representation of the situation in Europe, and I know of no other butterfly which regularly migrates in western Europe which is not on this list.

In North Africa we get conditions somewhat similar to southern Europe and many of our European immigrants have their origin in this area, along the northern or southern edge of the great desert belt. When however we move further south into tropical Africa a new fauna and new migrants are found. The chief of these are the Pieridae: Catopsilia florella Fab. and Anapheis (Belenois) aurota (mesentina Cram.) and A. creona Cram. (severina Cram.). The former migrates chiefly in S. & E. Africa, sometimes reaching Egypt. I have seen it moving to the north in N.E. Tanganyika for 16 weeks. The same species has also been recorded migrating in Ceylon. In West Africa Libythea labdaca Ww. is a regular migrant in Nigeria and the Gold Coast, and has been reported to have flights in different directions at two seasons. More observations on this point are urgently required, here as in all parts of the world.

In Ceylon directional flights of butterflies are frequent and have been known for nearly a century. Nearly one-third of their 250 species have been involved, but of these only about 20 are regular migrants; the others may be accidental imitators. Included in the regular migrants are the following:-

PAPILIONIDAE:- Papilio hector L.*; P. demoleus L.*; P. polytes L.; P. nomius Esp.

PIERIDAE:- Catopsilia crocale Cram.*; C. pomona Fab. and pyranthe L.*; Ixias pyrene L.; Appias albina Bdv.*; A. paulina Cram.*; Hebomoia glaucippe L.*; Huphina nerissa Fab.

DANAIDAE:- Danaus limniace Cram.*; D. septentrionalis Butl.*; Euploea core Cram.*; kollari Feld.; and coreta Godt.

NYMPHALIDAE:- Precis iphita Cram.; Kallima horsfieldi Koll.; Atella phalanta Dru.* (also migrates in E. Africa); Ergolis ariadne L.*.

LIBYTHEIDAE:- Libythea myrrha Godt.

and about half a dozen Lycaenidae and few Hesperiidae (see Williams 1927 and 1930: p.291).

In southern India regular migrations have been observed on a large scale by Evershed(Williams 1927) at Kodaikanal in the Pulney hills at a height of over 7000 feet. There was a definite movement of Papilionidae (2 spp.), Pieridae (6 spp.), Danaidae (4 spp.), Nymphalidae (7 spp.), and Hesperiidae (1 sp.) and some Dragonflies towards the south from end of August to the middle of November, with a maximum in October. Then between February and June there was a more or less northerly movement of the Pieridae only. The species concerned were chiefly those known to migrate in Ceylon and are marked with an asterisk (*) in the list above.

In North India there are records of movements up the hills at the beginning of the hot season in March and April, and down again to the plains at the beginning of the cooler weather in August to November. The lycaenid C. boeticus, together with Colias fieldi Ménétr., Pieris brassicae and some Catopsilia make up the majority of the recorded flights (Williams 1938).

In Malaya, Java, and other East Indian islands the flights are chiefly of the Catopsilia, Appias, and Euploea. In Cochin China there is a remarkable record by Fisher (1939) of a mixed flight of many species, but particularly the Swallow-tail Papilio aristeus Cram. which has never been recorded as a migrant elsewhere. In China there are only one or two records; undoubtedly their scarcity is due to the absence of observers.

In Australia the chief migrants are the hesperiid Badamia exclamationis Fab. in Queensland (also recorded as a migrant in Ceylon), and the pierid Anapheis java teutonia Fab. of which there are a number of records chiefly from New South Wales; there is also some evidence of a movement of this species across the sea to Tasmania. The variety kershawi McCoy of Vanessa cardui also occurs at times quite suddenly in great numbers, and may cross the sea between Australia and New Zealand.

To complete our rapid survey, the migrants in tropical South America include a number of species of Catopsilia, Megalura chiron Fab., Coea acheronta Fab., Calpodes ethlius Cram., and several others; while in the southern temperate portion we find Colias lesbia Fab. (first seen in migration at sea by Charles Darwin when on board the 'Beagle'), Danaus plexippus erippus Cram., Precis lavinia Cram., Phoebis sennae L. (eubule L.), Libytheana carinenta Cram., and some others. There is evidence that D. erippus and C. sennae have spring and autumn flights in opposite directions.

The area is so vast, the number of species of Lepidoptera so great and the number of entomologists so few, that everywhere we turn we are held back by lack of information. We need hundreds more records of these migratory flights from all over the world, and good records made by observers who know to some extent what they want:- records with dates, locality, direction, duration, numbers of individuals, direction of wind - etc. etc. - and many specimens so that species, race, sex, size, food reserves (fat) and other information can be tabulated. One or two specimens is not enough; often there may be several species in the flight, in which case we want to know their relative abundance; from a number of specimens dominant varieties may be recognised which may in turn give a clue to the origin of the movement. A particularly close watch must be kept for thin flights, for they are often in different directions and at a different time of the year from the large gregarious movements.

Butterflies at sea or on oceanic islands are also of great importance. Recently some Painted-Lady butterflies were caught on Tristan da Cunha Island, which is in the South Atlantic about mid-way between South Africa and South America, and about 2000 miles from each. To my surprise they turned out to be NOT V. cardui L. which is a great migrant and fairly common in S. Africa, nor even V. carye Hbn. which is a migrant in Argentina, but V. brasiliensis Moore, a species from tropical America which has not yet been observed in any mass migratory flights.

In Western Europe alone have we plenty of information and here we have made an interesting study of the association of species. The abundance of 35 immigrant Lepidoptera in Great Britain has been estimated for each year in the past 100 years by examination of all old records. We then calculated the correlation between different species in the same year. Some tend to occur together in the same year or to be absent together; others are negatively correlated and when one occurs in numbers the other is more likely to be rare. An account of this work by G.F. Cockbill will be found in Williams et al, 1942: p.254.

I would be glad to hear personally from anyone who is interested in the migration of butterflies in any part of the world.

REFERENCES

Fisher, K.J. 1938. "A Migration of Butterflies in Cochin-China." Proc. R. Ent. Soc. London (A), vol.14: pp.75-76.

Williams, C.B. 1927. "A study of Butterfly Migration in South India and Ceylon." Trans. Ent. Soc. London, vol.75: pp.1-33.

---------- 1930. "The Migration of Butterflies." pp.xi, 473. Oliver & Boyd, Edinburgh & London.

---------- 1938. "The Migration of Butterflies in India." J. Bombay Nat. Hist. Soc., vol.40: pp. 439-456.

---------- 1939. "The Migration of the Cabbage White Butterfly. (Pieris brassicae)." Verh. 7 Int. Kong. Ent. (Berlin), vol.1: pp.482-493.

Williams, C.B., Cockbill, G.F., Gibbs, M.E., and Downes, J.A. 1942. "Studies in the Migration of Lepidoptera." Trans. R. Ent. Soc. London, vol.92: pp.101-283, 2 pls.

THE PHOTOGRAPHY OF TYPES OF LEPIDOPTERA*

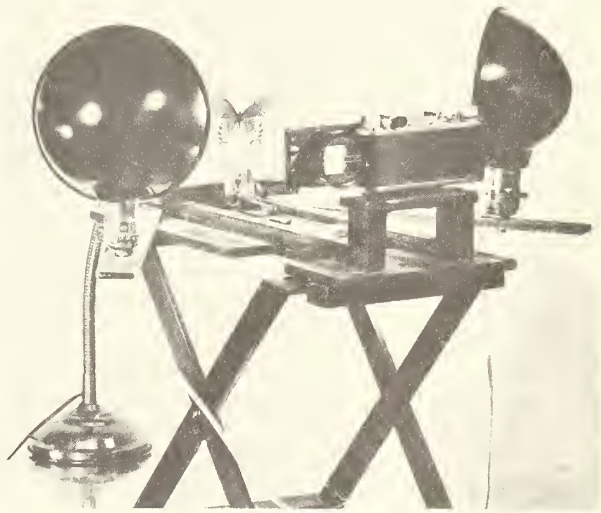
by Cyril F. dos Passos
Mendham, New Jersey

The importance of photographing type specimens of Lepidoptera with the labels attached is self-evident. Photographs of insects without the labels are of little scientific value. In the natural course of events and even with the best of care, it is doubtful whether types of Lepidoptera will last many hundred years. There are many risks incidental to the handling of types. Other hazards, such as war, fire and various acts of God, tend to render their preservation uncertain. On the other hand, negatives and prints of types should last almost indefinitely. They may be reproduced when necessary, exchanged between museums, and supplied to students for scientific study. In many cases the photographs are as satisfactory as the types. Their use often makes the handling of type specimens unnecessary.

J.D. Gunder appears to have been the first person to design and use a compact, portable outfit to photograph types of Lepidoptera. The Gunder apparatus had certain obvious defects. In the first place, the illumination being very close to the lens of the camera resulted in bad reflections and cast unsightly shadows on the background; secondly, the pin holder was unnecessarily large and clumsy; and thirdly, the label holder could not readily accommodate the large number of labels which are often found on types.

The apparatus herein described and figured obviates all of these difficulties. The two photoflood bulbs in reflectors are mounted on arms folding close to the apparatus when not in use, but extending to any desired angle when photographs are being taken. Thus there are no reflections or shadows behind the insect. Instead of a pin holder, the point or head of the pin on which the insect is mounted (depending upon which side is being photographed) is stuck into a very small lump of modeling clay, affixed to a piece of ground glass. This modeling clay lasts a long while and never loosens from the glass. It is hidden from view by the body of the insect. The piece of ground glass with the smooth side toward the camera fits into a groove and may be removed in order to pin the insect to it. Behind the glass is a white, silk screen and in back of that a gooseneck table lamp with a frosted bulb. The screen is removable and may be replaced by a black screen if a light-colored insect is to be photographed. The back light helps also to kill all shadows and gives an artistic background to the picture. The labels are pinned with minuten nadeln pins on a thin piece of balsa wood, painted black or white. This wood, cut into several sizes, easily holds a number of labels. The pins, including the one holding the insect, being head on to the camera, show merely as dots on the photograph. The piece of balsa wood, which is removable for pinning the labels to it, is held by a clip, such as used to hold negatives while drying. In turn, the clip is mounted on an upright column and may be moved up or down to bring the labels directly under the insect.

The camera used is a Leica Model F with an Elmar 50 mm. f:3.5 lens stopped down to f:9 to give greater depth of focus and to allow for minor errors in positioning the insect. With two photoflood bulbs the exposure is usually about 1/30 of a second. The camera and lens are mounted on opposite sides of a Sliding Focusing Copying Attachment, manufactured by E. Leitz, Wetzlar, Germany, which is supported at the proper height by a wooden base. The camera may be slid sideways from the lens for focusing on a ground glass, but it is not necessary to focus each time a picture is taken unless a very large insect is to be photographed. In that case the lens is somewhat retracted and the label holder pushed slightly away from the camera. Otherwise the column holding the label holder, which can be moved backward or forward independently of the glass and screen holder, is placed at a predetermined distance from the camera where the label is in sharp focus, and only the glass and screen holder need by moved back or forth (because of the different heights of insects on pins) until the insect is directly over the label. Then it too is in sharp focus. The insect, when photographed with the lens fully extended, is about one quarter natural size and the prints are enlarged four times to give a natural sized picture of the insect.



The accompanying figure shows the apparatus better, perhaps, than words can describe it. It will

(cont. next page)

*Editor's note: The substance of this article was published by Mr. dos Passos in 1945 (Bull. Brooklyn Ent. Soc., vol.40: pp.166-169). At our request that he revise it to reach a larger body of lepidopterists through the Lep. News, he prepared this condensed account. (C.L.R.)

PROF. DR. E. MARTIN HERING, who recently became a member of the Lepidopterists' Society, is one of the world's foremost lepidopterists (see review of his book Biologie der Schmetterlinge in Lep. News 2: p.95). It is a pleasure to report that he is continuing his notable studies of Microlepidoptera. Prof. Hering has been Chief of the Lepidopterological Department of the Zoological Museum of Berlin since 1921 and has worked on various families of Rhopalocera and Heterocera, but specializing in Zygaenidae, Limacodidae, Lasiocampidae, Pericopidae, and Dioptidae of the world and in the Palaearctic Micros. His primary interests are now in leaf-mining insects and he is preparing a new book on the Leafminers of Europe, of which the first part is in completed manuscript. The keys, now in preparation, will allow identification of the insects from their mines alone! Prof. Hering lost a large part of his collection of leaf mines by plundering at the end of the War. He desires to exchange mine specimens with Microlepidopterists, particularly in North America.

J.F. GATES CLARKE has completed a study of the types of American Microlepidoptera in the British Museum, to which he has devoted over two years, and is returning to his place in the U.S. Division of Insect Identification located in the U.S. National Museum, Washington, D.C. The British Museum will publish his prodigious work in several extensively illustrated volumes.

DR. ELWOOD C. ZIMMERMAN, of Hawaii, recently visited New Haven on his way to the British Museum. For several years the curator of insects at the B.P. Bishop Museum in Honolulu, he is producing a fine series which will cover in detail all the insects of Hawaii. The first five volumes appeared in 1948 (University of Hawaii Press). The next two volumes will be devoted to the Lepidoptera, with over 1000 species involved. About 80% of the types (of Meyrick, Walsingham, etc.) are in the British Museum, mainly in the Fauna Hawaiiensis Collection. Dr. Zimmerman, best known as a Coleopterist, but a versatile entomologist, plans to spend one year in London devoting himself primarily to the 3000 illustrations of Lepidoptera which will appear in his work. He will move into the place in the B.M. just vacated by J.F.G. Clarke.

PROF. KENNETH J. HAYWARD, who has spent the past several months studying Lepidoptera in the British Museum is returning to the University of Tucumán, Argentina, in late September.

We must report with regret the passing of one of our oldest members, EDWARD D. KEITH, the lone representative from Rhode Island, on 15 March 1949.

PAUL F. BRUGGEMANN, the able field lepidopterist from Furness, Saskatchewan, is joining the Northern Insect Survey of the Canadian Government for the summer of 1949. He will be at Dawson, Yukon Territory.

DR. BRYAN P. BEIRNE, the author of extensive papers on phenology, faunal origins, systematics, and genitalia of Lepidoptera, is leaving his present post as Lecturer in Entomology in the University of Dublin, Ireland, to take up a post in the Taxonomic Unit of the Division of Entomology of the Canadian Department of Agriculture.

One of the world's leading entomologists, DR. AUGUSTUS DANIEL IMMS, died in England in March, during publication of the seventh edition of his unsurpassed General Textbook of Entomology. His passing is a very great loss to entomology.

DR. J.W. TILDEN, 125 Cedar Lane, San Jose, Calif., will be glad to send to interested individuals a reprint of his paper: "An Occurrence of the Pupa of Glaucopsyche lygdamus behrii (Edwards) in an Ant Nest." (See Lep. News, vol.1: p.16). When writing him, please include a postage stamp.

D.H. KISTNER, 5031 N. Kolmar Ave., Chicago 30, Ill., is willing to send anyone requesting it his checklist of the Rhopalocera caught in the Ohio Valley Region from 1939-48.

Dos Passos: PHOTOGRAPHY OF TYPES- cont.

be noted that the device rests on a folding support, although it may be set directly on a table. It has been found, however, that it is easier to work standing up; hence the support which raises the apparatus to a convenient height.

Any fine-grain film with a wide color sensitivity may be used. A color film, theoretically, would be ideal but none thus far tried seems to reproduce all colors correctly for scientific work, where the exact colors are of vital importance. Furthermore, it is much more expensive and prints are not easily made.

With this apparatus photographs have been taken already of the types of North American Rhopalocera and some Heterocera in the Academy of Natural Sciences of Philadelphia, the American Museum of Natural History, the British Museum (Natural History), the Canadian National Collection, the Carnegie Museum, the Linnean Society of London, the Museum National d'Histoire Naturelle, the Zoological Museum, Tring, and others. In all, about thirteen hundred types have thus far been photographed. It would be desirable to extend this work to include all Lepidoptera. If every museum would do its share, a collection of photographs, possibly ninety per cent complete, could be gathered together, and by the exchange of prints become available in all parts of the world. The expense is trivial compared with the results obtained. All of the foregoing negatives are now in the possession of the American Museum of Natural History, Department of Insects and Spiders, so that application for any prints should be addressed to the Chairman and Associate Curator of that Department.

HUNGARIAN LEPIDOPTEROLOGY- I. A SHORT HISTORY

by Dr. L.A. Gozmány and Dr. G. Lengyel
Budapest, Hungary

Hungary, in the 15th, 16th, and 17th Centuries, was in a perpetual military turmoil. In this borderland of Europe where German, Turkish, and other inimical forces fought incessantly there remained only a few remote corners where the fire, or rather candlelight, of science burned. It is easy to understand that only when a Hungarian could have time for other thoughts than the problem of his mere survival was he able to take up that worn thread of culture which was so long lost after the death of King Matthias Corvinus late in the 15th Century.

We can find, however, the first traces of entomological interest in the first half of the 17th Century, when a small paper by one Andrew Horváth was published, - in Latin, according to the time - dealing with insects under the title: "Disputatio Physica de Insectis". This paper is insignificant aside from its earliness in treating the subject. We can skip over other authors, such as G. Miskolczi, I. Segesvári, J. Conrad, to Charles Turzer, who in 1792 published a lepidopterological paper, in Linnaeus' system, on the fauna of his village and its environs in northern Hungary, with the surprisingly modern wish that also other naturalists publish their observations made in other territories in order to have a clear view of our fauna in later times. A year after Turzer's information, the major work of M. Piller and Ch. Mitterspacher, University professors of Nagyszombat, published under the sonorous title "Iter per Poseganam Slavoniae Provinciam mensibus Junio et Julio Anno 1792 Susceptum", described their natural historical explorations in Com. Pozsega, giving an account of the capture of 35 species of butterflies.

John Grossinger, Jesuit, wrote five volumes on "Universa Historia Physica Regni Hungariae Secundum Tria Regna Naturae Digesta", published in 1794-1797. We can note the influence of Linnaeus' immortal activities on the works of these people, writing of their scientia amabilis, issuing scores of books one after the other. Grossinger's work deals with Lepidoptera in its 4th volume, inventing Hungarian names for the commoner species; in this his work is also of linguistic-historical interest.

We turn now to peculiar times. In the Western European states, with their scarcer fauna, the zealous entomological amateurs have also in their ranks collectors who exhibit a more mercenary sense than the others. For a long time men dominated entomology who refused to publish or reveal their "secret" collecting data and methods for fear of competition. These people came to the rich and still mainly unexplored Hungarian entomological Eldorado: Germans, Czechs, and others. Some names for case of reference are: Koy, Böhm, Haberhauer, Kindermann, Dahl, Stentz, and the two Ankers, none of whom contributed anything to real science, with the possible exception of the Ankers brothers.

Turning away from this era we come to our ablest lepidopterist: Imre Frivaldszky. Born in 1799, eventually a physician, he was an indefatigable lover of Lepidoptera. He showed the way for later collectors and entomologists in Hungary with his discoveries of new collecting places and special Hungarian habitats, his numerous monographs, his descriptions of new species, and his scientific working methods. His great work, a complete informative manual on Hungary's fauna, was never finished, but he did publish a gem: "Characteristic Data in the Hungarian Fauna". He collected in the whole country in the years 1833-1870, organizing and nurturing a host of new acolytes to the science. Member of the Academy of Sciences, and Keeper of the Entomological Department of the Hungarian Natural History Museum, he did more for Hungarian lepidopterology than all his numerous contemporaries and all predecessors.

L. Abafi-Aigner gave the next momentum to Hungarian lepidopterology. He was a great publisher and his quill gave birth to hundreds of articles on every aspect of his science. In 1896 he compiled the "Catalogue of Hungarian Butterflies and Moths" from the 8 zoogeographical regions of the country. He also wrote the first good manual and determining book, with about 50 colored plates. He collected throughout the country, and according to custom described numerous aberrations. At this time the first Hungarian entomological periodical, Rovartani Lapok, was established as a suitable place to exchange observations and to publish papers. As the sole entomological review, it dealt with other insect orders also, but lepidopterists were in absolute majority, and it can be justly called a lepidopterological periodical. Its editor was Abafi-Aigner.

Let us deviate now for a moment to mention the veritable host of foreign scientists and collectors who came to Hungary, sometimes returning yearly to collect and explore her lepidopterous treasures. We can only mention a few celebrities: Hübner, Rebel, Staudinger, names now immortal. Baron Rothschild had his own private collector, Predota, here, specially commissioned to collect in the Great Plains and southern parts of Hungary. M. Fontaine published her diary in the Entomologist, written during her Hungarian collecting in our classical haunts, remembering hospitality and the cordiality of the scientists who accompanied her on the collecting trips.

In 1894, the Entomological Bureau was established, dealing with applied agri-, horti-, and silvicultural entomology. Its chief was J. Jablonowszky, who was also one of the chief tycoons of the Entomological Society, together with A. Schmidt, the successor of Abafi-Aigner as Keeper of the Lepidoptera Department of the Museum. He was chiefly a biologist but also a good faunistical explorer. Jablonowszky was followed by Gy. Kadocsa, still the President of the Society, whose great knowledge and sure judgment made him the natural leader of our circle.

Now, after the war, we are trying hard to resuscitate the life of our esteemed science, with the help of Dr. L. Kovács, specialist of Agrotidae, Dr. L. Issekutz, specialist of Zygaenidae and Parnassiidae, and other zealous colleagues.

14. Butterflies
by Ralph W. Macy and Harold H. Shepard*

This is a book for the collector. It is superior to all other butterfly books covering eastern North America in the following COMBINATION of characters: relatively inexpensive, keys for identification, fairly current nomenclature, numerous figures, synonymies. Alone, it will permit any collector in its range to identify nearly all butterflies he might catch and to find most of the essential life history information known. Purported to be "a guide to all the butterfly species known to occur in that part of the United States and adjacent Canada lying east of Nebraska and the Dakotas and as far south as the northern borders of Missouri, Kentucky, and Virginia", it nevertheless lacks a few of the most interesting species, such as Erora laeta Edw. and Incisalia lanoraieensis Shep. It is certainly little more than a "guide" and not comparable to Scudder's superb, perhaps unexcellable, "Butterflies of the Eastern U.S. and Canada."

The four colored plates show 29 of the commonest species in accurate color but much reduced and with no indication of the actual reduction. The 38 black-and-white photographs (28 of Hesperiidae) of mounted adults were taken by Austin H. Clark,and in most cases are clear, but for most species the keys are more effective for identification.

The precise records given are from Minnesota and the book might better have been entitled Butterflies of Minnesota and Eastern North America. For a Minnesota collector it must be invaluable.

There is an extensive introductory section: "About Butterflies", with especially interesting discussions of "Butterflies in Folklore and Primitive Life", "Butterfly Odors and Sense Organs", and "Habitats and Ranges". The list of butterflies which hibernate as adults omits the champion of them all - Nymphalis antiopa! There are too many similar small errors scattered through the text.

The compilation, from many sources, of notes on life history and habits is especially excellent and rivals the keys as the most valuable feature of the book. For nearly every species the host plants are mentioned and there are descriptive notes aiding in finding and identifying the ova, larvae, and pupae.

It is an unhappy reflection on the confusing state of the nomenclature of North American butterflies that very many names in "Butterflies" represent changes from names in Holland's revised "Butterfly Book" published only ten years earlier (1931), and that many more changes are now required less than ten years later. It seems likely that for some time to come it will be necessary to have a new butterfly manual every few years to bring out name changes and additions to the still fragmentary knowledge of life history.

C.L. Remington

*Pp.247, 4 pls.col., 38 photos, 7 figs. 1941. Minneapolis (U. of Minn. Press). Obtainable at bookstores and: University of Minnesota Press, Minneapolis, Minn., U.S.A.

15. The Generic Names of the Holarctic Butterflies. Vol.I - 1758-1863
by Francis Hemming*

This is a book for the taxonomic specialist. It is a valuable work, the result of admirably painstaking search for all the information necessary in fixing generic names — just the kind of legalistic labor so irksome to the taxonomist interested in the insects rather than the names. A sigh of gratitude from European, Asian, and American butterfly students must have greeted the appearance of Capt. Hemming's book.

This "Vol.I", which perhaps will not be followed by others, covers names proposed from 1758 through 1863. Of course, no animal name prior to 1758 is valid nomenclatorially. Hemming chose 1863 because the Zoological Record begins with 1864, and as he states (p.5): "the period already surveyed contains practically all the generic names in regard to the correct use of which there has hitherto been real doubt." Hemming points out (p.5) that: "Scudder's 'Historical sketch of the generic names proposed for butterflies' (1875, Proc. Amer. Acad. Arts Sci., Boston 10: 1-293) is the basis on which any study of the generic names of butterflies must be founded, and the present work is, in effect, for the period covered, a re-examination of the material on which Scudder's work was based, in the light of the present International Code of Nomenclature and of modern bibliographical knowledge."

Exactly 500 generic names are considered, in a taxonomic sequence, with the following families in order: Danaidae; Satyridae; Morphidae; Amathusiidae; Nymphalidae; Libytheidae; Riodinidae; Lycaenidae; Pieridae; Papilionidae; and Hesperiidae. 145 of the names are for Nymphalidae, 72 for Pieridae, 61 for Hesperiidae, 60 for Satyridae, 55 for Lycaenidae, and 49 for Papilionidae. Valid names are printed in bold-faced type; homonyms and synonyms are printed in italics. Each valid name, whose type is (in Hemming's opinion) in the same genus as the type of an earlier proposed valid name, is so indicated in the text. In these instances the lumping of genera is pronounced. Pertinent references are carefully cited under each name. These are followed by a clear statement of the generotype and a terse discussion of the legalities concerned in the treatment of the generic name.

The book is concluded by an appendix giving extracts of pertinent parts of the International Code of Zoological Nomenclature, followed by an alphabetical index of generic names.

C.L. Remington

*Pp.184. 1934. London (British Museum). Available from: The British Museum (Nat. Hist.), Cromwell Rd., London, S.W. 7, ENGLAND, and many dealers.

THE ORDERS OF INSECTS

by Charles L. Remington
New Haven, Connecticut

In order to understand the evolutionary position of the Lepidoptera, one needs to study at least cursorily all the main forms of insects. The Class Insecta (animals with 6 legs on the thorax, distinct head with antennae, and abdomen with 11 segments originally) has been divided into various numbers of orders according to different authors. Linne, in 1758, recognized 6 orders, whereas Handlirsch and Brues & Melander have accepted as many as 34. In the present list we recognize 23 orders. On page 47 is a phylogenetic chart showing the writer's version of the probable relationships of the orders. The orders and higher groups of insects are listed and defined below.

A. Subclass APTERYGOTA (SYNAPTERA). (True Wingless Insects)
Contains all insects which have never had wings. Moulting continues after reproduction begins. Abdominal styli always present. Small, inconspicuous, nocturnal insects.

1. Order ENTOTROPHI. (Campodeids, Japygids, etc.)
No eyes; whitish cuticle; two tail filaments or forceps; mouthparts concealed; subterranean.

2. Order THYSANURA. (Silverfish, Rock-jumpers)
Usually with eyes and scales; three caudal filaments; mouthparts exposed; only scaleless forms (nicoletiids) subterranean; some common in houses.

B. Subclass PTERYGOTA. (True Winged Insects)
Contains all insects with wings or descended from winged ancestors. Moulting stops before reproduction begins. No conspicuous abdominal styli; usually none at all. The most successful members of the Animal Kingdom, occupying nearly every possible habitat; about 600,000 species.

a. Division PALEOPTERA. (Ancient Winged Insects)
Wings can not be folded back and rested flat on abdomen (primitive hinge mechanism only). Nymphs always aquatic. Once prominent; now only two living orders remain.

3. Order ODONATA. (Dragonflies & Damselflies)
Nymphs with caudal or rectal gills. Adults predacious; with 2 prs. similar net-veined wings; eyes very large; antennae tiny; copulatory organs of ♂ on 2nd and 3rd abd. segments; no moult after fully winged stage reached.

4. Order EPHEMERIDA (PLECTOPTERA). (Mayflies)
Nymphs with lateral gills. Adults non-feeding, short-lived; with 2 prs. net-veined wings, hind pr. small; eyes large; antennae tiny; copulatory organs of ♂ terminal, paired; 2 or 3 long tail filaments; one moult after fully winged stage (subimago) reached.

b. Division NEOPTERA. (Modern Winged Insects)
Wings with special hinge mechanism, permitting them to be laid flat on abdomen at rest. Now the most successful group in the Animal Kingdom, occupying nearly every possible habitat; about 600,000 species known.

aa. Section HEMIMETABOLA. (Incomplete Metamorphosis)
Immature stage (nymph) similar in appearance and usually habits to adults (but lacking full wings, of course). No pupal stage. Wings develop externally.

5. Order PLECOPTERA (PERLARIA). (Stoneflies)
Nymphs aquatic, flat, with long antennae, 2 long tail filaments (cerci). Adults with long antennae; hind wings large, fan-like, carried flat on abdomen at rest; 2 tail filaments (often short).

6. Order EMBIOPTERA. (Embiids)
Nymphs terrestrial; enlarged front tarsi (for spinning); flattened; chewing mouthparts; cerci short; ♀ wingless; ♂ wings all alike; colonial; under stones, wood, soil, etc.

7. Order DERMAPTERA. (Earwigs & Hemimerids)
Strong pincers on abdomen. Wings much like Orthoptera but forewings short; eyes present; cuticle hard, not white; nocturnal.

8. Order ORTHOPTERA. (Grasshoppers, Grylloblattids, Roaches, Praying Mantids, Walking Sticks, etc.)
Fore wings narrow and leathery (many wingless); hind wings large, fan-like, covered by fore wings at rest; chewing mouthparts; cerci short or long, usually segmented; nearly all eat vegetation, mantids carnivorous.

9. Order ISOPTERA. (Termites)
Social insects, winged only for swarming to found new colonies; workers wingless, soft, whitish; chewing mouthparts; wings all similar; cerci short; galleries connected to vegetable food source, often dead wood.

10. Order PSOCOPTERA (CORRODENTIA). (Book Lice, Psocids, Zorapterans)
Very small; wings (when present) all membranous, with large stigma and few veins; at rest wings folded roof-like over abdomen; tarsi with 2 or 3 joints; cerci tiny or absent; antennae long; chewing mouthparts; living on plants, in paper, in dead wood.

11. Order THYSANOPTERA. (Thrips)
Very small, slender; mouthparts forming short, piercing beak; antennae short, thick; all wings narrow straps with fringe of long hairs; wings flat on abdomen at rest; tarsi with exsertile vesicle at tips; on vegetation, fungi, wood. Thrips have pseudo-pupal stage before maturity.

12. Order ANOPLURA. (Bird Lice, Sucking Lice)
Always wingless, but ancestors presumably winged; horizontally flattened; mouthparts for chewing or as short beak for sucking; antennae short; eyes inconspicuous; claws specialized for travel on hairs and feathers; no cerci; all external parasites of mammals & birds.

13. Order HEMIPTERA. (True Bugs,Aphids, Scales,etc.)
Fore wings usually thickened in fore half or entirely; mouthparts as long piercing & sucking proboscis, held backwards under head at rest; many herbivorous, some carnivorous.

bb. Section HOLOMETABOLA. (Complete Metamorphosis)
Immature active (feeding) stage (larva) not resembling adult at all. Non-feeding maturation stage (pupa) between larva and imago. Wings develop internally.

14. Order COLEOPTERA. (Beetles, Weevils)
Fore wings very hard, entirely shell-like, at rest covering large, much folded membranous hind wings; mouthparts very diverse, sometimes on rostrum, but always of chewing type; in most aquatic & terrestrial habitats.

15. Order STREPSIPTERA. (Stylopids)
Minute; fore wings of ♂ reduced to small club, hind wings fan-like; ♂ antennae finger-like; ♀ larviform, always wingless; internal parasites of bees, wasps, leaf hoppers, silverfish; very rare.

16. Order HYMENOPTERA. (Sawflies, Ants, Bees, Wasps)
All 4 wings membranous; hind wings smaller and with anterior row of hooks for coupling with fore wings; wings often absent; mouthparts for chewing except in bees (sucking); ovipositor always present in ♀, sometimes as sting; larva usually legless; sawfly larvae much like Lepidoptera larvae but lack hooks on abdominal legs; pupae usually in silk cocoon; plant feeders, endoparasites, carnivores, etc.

17. Order MEGALOPTERA. (Alderflies & Dobsonflies)
All wings similar, many-veined, held roof-like or flat over abdomen at rest; long antennae; no cerci; very soft abdomen; larvae aquatic, with biting mouthparts; pupae always terrestrial, in mud cell.

18. Order NEUROPTERA. (Ant-lions, Lacewings, etc.)
All wings similar, many-veined, held roof-like over abdomen at rest; wing veins notably forked near tips; antennae short & knobbed or long; no cerci; abdomen soft; larvae usually terrestrial, with mouthparts for piercing & sucking, highly predacious; pupae in silk cocoon.

19. Order MECOPTERA. (Scorpion-flies)
Chewing mouthparts on tip of long beak; all wings similar, often with markings; antennae long; legs long; cerci short; ♂ genitalia usually conspicuous, often "scorpion-like"; larvae caterpillar-like, in soil, lack hooks on abdominal legs.

20. Order TRICHOPTERA. (Caddis-flies)
Moth-like, but wings hairy (few or no scales); wings always roof-like over abdomen at rest; mouthparts not capable of feeding, much reduced; antennae long; larvae and pupae always aquatic; larvae usually in case, have 1 pr. hook-bearing anal legs; pupae with strong mandibles, often active.

21. Order LEPIDOPTERA. (Moths & Butterflies)
All 4 wings membranous, few cross veins, heavily clothed with scales (wings rarely absent); antennae long; mouthparts usually suctorial, composed of maxillae; mandibles usually absent; larvae usually caterpillar-shaped; abdominal legs with hooks or crochets; pupae essentially inactive.

22. Order DIPTERA. (True Flies, Mosquitoes, etc.)
Only 1 pr. wings; 2nd pr. reduced to club-like halteres with gyroscopic function in flight; wings never heavily scaled nor very hairy; mouthparts very diversified, usually suctorial; metathorax very small; larvae aquatic or terrestrial, plant or animal feeders or parasites, legless, head rarely well-developed; pupa inactive and enclosed in last larval skin or active and free.

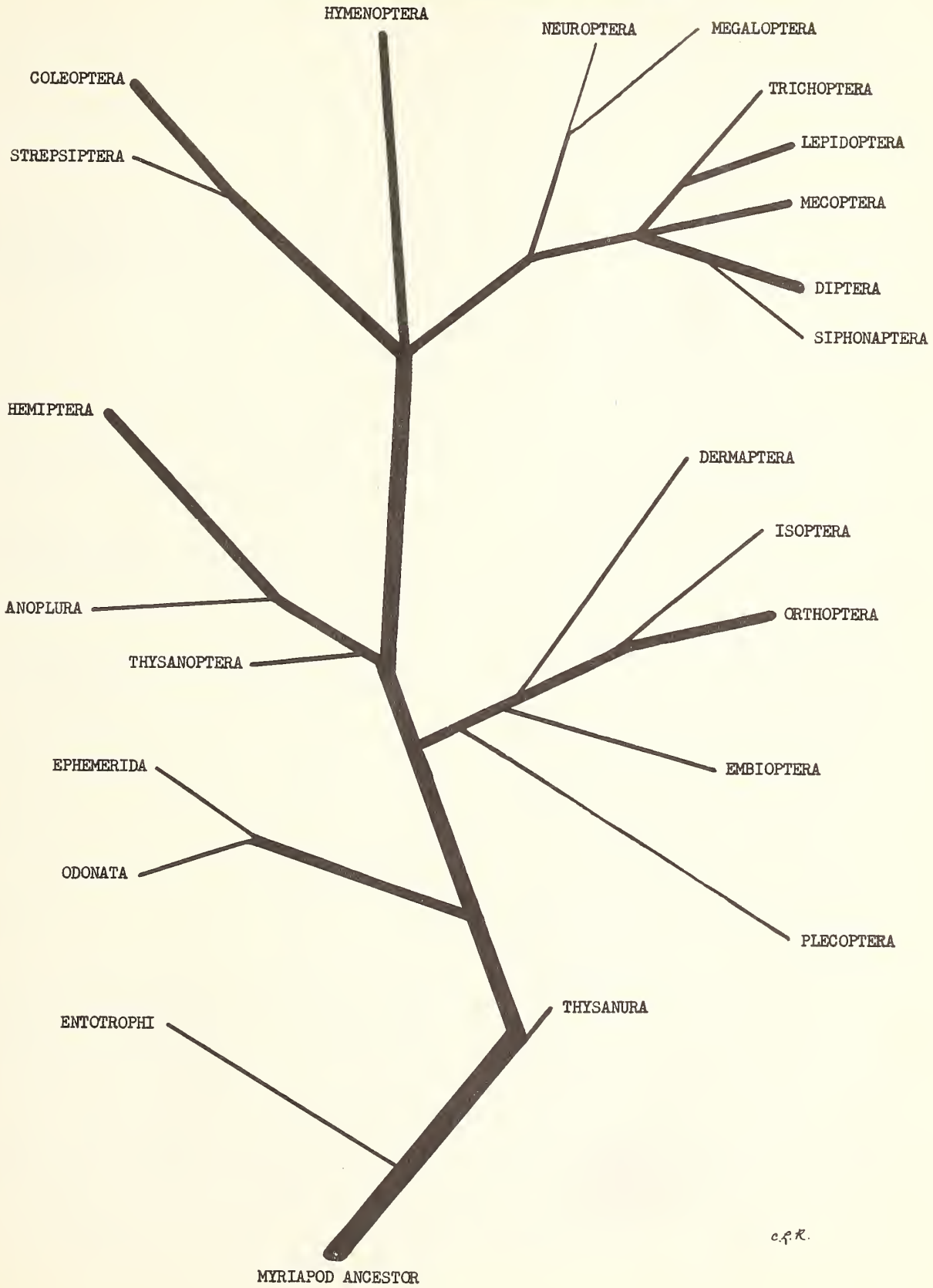
23. Order SIPHONAPTERA. (Fleas)
Small, strongly flattened vertically; no wings ; antennae short, in grooves along head; piercing and sucking mouthparts; adults external parasites of mammals and birds; larvae long, legless, pale, living in trash; pupae in cocoons.

Several groups sometimes considered orders are not so accepted in the above list. The ZORAPTERA fit well in the Order PSOCOPTERA. The PHASMATODEA (Walking Sticks), MANTODEA (Praying Mantids), BLATTARIA (Roaches), and GRYLLOBLATTODEA are satisfactory suborders of the Order ORTHOPTERA. The MALLOPHAGA (Bird Lice) differ in no essential characters from the Sucking Lice and are combined with them in the Order ANOPLURA. The HOMOPTERA (Scales, Aphids, Cicadas, etc.) are not different from the True Bugs in ordinal characters and remain in the HEMIPTERA. The DIPLOGLOSSATA (Hemimerids) are merely highly modified DERMAPTERA. The ZEUGLOPTERA (Micropterygids) do not seem separable from the LEPIDOPTERA.

There is some doubt as to the desirability of separating the STREPSIPTERA from the COLEOPTERA and the MEGALOPTERA from the NEUROPTERA, but the above arrangement is satisfactory for present purposes.

The COLLEMBOLA (Springtails) and the PROTURA (Telson-tails) are usually included in the Insecta, but the evidence seems clear that the COLLEMBOLA are well separated from the insects and must form a group of their own, probably below the Myriapods. The PROTURA are too little known and perhaps too degenerate for definite placement, but they differ from insects in some fundamental ways. Both groups have been included in the Insecta chiefly because they possess three pairs of legs.

PHYLOGENETIC CHART OF THE ORDERS OF INSECTS



PAPILIO GLAUCUS FORMS.- Today April 24 I took off for a little collecting trip to the neighboring woods and took a pair of Papilio in copulation. The ♂ was P. glaucus turnus canadensis whose forewings were only 29 mm. long. The ♀ was P. glaucus glaucus (dimorphic) whose forewings measured 51 mm. and whose wings and body were not hairy (as compared to the very hairy ♂).

T.B. Blevins
Rockville, Md.

PARASITES OF LEPIDOPTERA AT ELSAH, ILLINOIS.- Parasites were reared as listed below from the following species:

a. Papilio troilus L.: Epiurus alborictus Cresson ♂ from second instar larva of troilus emerged 7 Sept. 1941. E. alborictus was known only from leaf-rolling Tortricidae and its parasitization of P. troilus may have been accidental. Pteromalus vanessae Howard also reared 17 Mar. 1943 from troilus pupa at Van Buren, Mo., by Daniel Starrett.
b. Anthocharis midea Hbn.: Single Apanteles limenitidis Riley from midea larva emerged 20 June 1942; single Hypopteromalus tabacum Fitch from midea larva emerged 20 June 1942.
c. Limenitis astyanax Fab.: Mesochorus discitergus Say reared from hibernaculum of astyanax 12 May 1943.
d. Vanessa virginiensis Dru.: One Spilochalcis albifrons Walsh reared from virginiensis larva emerged 19 June 1943.
e. Vanessa cardui L.: Amblyteles rufiventris Brullé emerged from cardui pupae 3 and 8 June 1941.
f. Polygonia interrogationis Fab.: large number of Pteromalus vanessae Howard reared from interrogationis pupae 24 Nov. 1942 and 25 Jan.1943.
g. ? Strymon cecrops Fab.: Metadontia amoena Say emerged from two pupae probably of cecrops 17 Nov. 1942.
h. Proteides clarus Cram. (=Epargyreus tityrus Fab.): Several Apanteles argynnidis Riley from clarus larva emerged 30 Oct. 1942.
i. Celerio lineata Fab.: Hypopteromalus sp. ♂ from lineata larva emerged 15 Jan. 1943.
j. Telea polyphemus Carm.: One Eremotylus macrurus L. emerged from polyphemus cocoon 3 Feb.1943.
k. Walshia amorphella Clem.: Acrolyta empretiae Ashmead (4 Apr. 1943); Calliephialtes graphilithae Cresson (2 Apr. 1943); Pristomerus ocellatus Cushman (20 Apr. 1943); Pr. agilis Cresson (15 Apr. 1943) all reared from amorphella galls on Amorpha fruticosa (False Indigo).
l. Gnorimoschema gallaesolidaginis Riley: Sesioplex depressus Viereck reared from this gall on Solidago 6 and 7 March 1942, 2 Apr. 1943.

Several of these are undoubtedly hyperparasites on primary parasites of the Lepidoptera. I gratefully acknowledge determinations of the parasites by C.F.W. Muesebeck (Braconidae), R.A. Cushman (Ichneumonidae), and A.B. Gahan (Chalcidoidea).

C.L. Remington
New Haven, Conn.

THE RICHARD TECHNIQUE FOR SECURING EGGS.- The "electric light and flower pot" system described in the News, June 1948 issue, has worked out so well with Anthocharis reakirtii and Euchloe creusa lotta that I now expect to obtain eggs from many other species of butterflies. These species laid so many eggs on each flower stalk that I had to remove newly-hatched larvae to keep them from devouring the unhatched eggs.

William H. Evans
Sun Valley, Calif.

[Editor's Note: S.B. Smalley also reported success with this system for Speyeria. I, too, have had excellent results with Colias philodice, Mitoura damon, and to a lesser degree with Lycaenopsis pseudargiolus; attempts with Vanessa cardui, Erynnis brizo, and E. juvenalis failed. (C.L.R.)]

1948 SEASON SUMMARY ADDITIONS - CENTRAL.- Libytheana bachmanii was quite common locally in the Chicago area all through the month of July. Previously, they had occurred only occasionally, and then as isolated specimens, but this year, some fellow collectors and I captured over a hundred specimens in a month of collecting. We were not fortunate enough to see if the species did migrate from Chicago at the end of the summer.

A very fresh specimen of Limenitis arthemis male was taken by me on July 25. Two other specimens were reported seen by other collectors. It is normally quite scarce in Chicago.

Lycaena hypophlaeas was unusually scarce, only 5 specimens being found. I captured one aberrant male. The marginal row of spots on the primaries was fused on the upper side to form a wide black band.

Extensive series of Strymon falacer and acadica were taken by Mr. A.K. Wyatt and myself on July 10 at Waukegan, Illinois. I was fortunate enough to capture two aberrant male falacer. One had the marginal spots on the underside of the right primary extended into a wide white band, while the second male had the marginal row of spots of the left secondary (underside) joined into a wide blotchthat all but filled the wing.

F.E. Rutkowski
Peru, Illinois

1948 SEASON SUMMARY ADDITIONS - SOUTHEAST.- D.H. Kistner, of Chicago, Illinois, made systematic collections of Lepidoptera in Great Smoky Mts. Nat. Park of Tennessee from July 19-25, 1948. The 23 spp. of butterflies taken included 5 Pieridae and 10 Nymphalidae. Proteides clarus (= Epargyreus tityrus) was the commonest species from "the top of the highest mountain" to "the lowest valleys." On Clingman's Dome (el.6600') Polygonia faunus and Speyeria aphrodite were numerous. Papilio philenor, Euptoieta claudia, Junonia coenia, Agraulis vanillae, and Limenitis astyanax were especially common in lower localities. A single poor Speyeria diana was seen near Elkmont, Tenn. In the locality at Brevard, North Carolina, where diana was found in 1947, none were seen by Kistner in 1948.

TECHNIQUE NOTES

KILLING LEPIDOPTERA QUICKLY

I subscribe to the Swiss periodical "Entomologisches Nachrichtenblatt" and I ran across an article that may be of some interest to the Society members. It is found on page 28 of the July 1948 issue. Here in general is the translation:

"A good way to kill large butterflies and moths, particularly hawkmoths, is by injecting two to three drops of aqueous ammonia into them with a hypodermic syringe. The advantage of this process lies in the fact that the insect dies immediately and can not flutter about for a short time as when dabbed with ether or when confined in a potassium cyanide jar. Large beetles and similar insects can also be killed this way."

Robert Cobb
Cincinnati, Ohio

CREOSOTE HOLDERS

In connection with the article by dos Passos, "The Care of a Collection and Library" (Lep. News, vol.2: p.27), I would like to mention that I have used creosote in small glass cups attached to stout steel pins - which have the advantage that they do not spill their contents, even if held upside down, are easily charged and do not deteriorate. They were purchased from Flatters & Garnett, Ltd., 309 Oxford Rd., Manchester 13, England, at 17/6 (about $3.50) per gross in 1940. The only pest one has to contend with here is Dermestes and it is comparatively rare. I prefer paradichlorobenzene - which lasts, even in ordinary cardboard boxes, when these are kept in tight cabinets, for about 6 months - because I detest the smell of creosote.

P.F. Bruggemann
Furness, Saskatchewan

A notice of the existence and purposes of the Lepidopterists' Society and the Lep. News appeared in Science for March 4 (vol.109: p.243) and the News was listed in American Scientist for April (vol.37: p.11). The Society has gained in membership and status as a result. We are grateful to Prof. G.A. Baitsell, Editor-in-Chief of Science and editor of American Scientist, for his kind attention. A notice similar to that in Science appeared in Matsumushi (Japan) through the kindness of Dr. Chihisa Watanabe and resulted in a strong response from Japanese lepidopterists.

T.B. Blevins has sent us a supply of reprints of two papers: "Some Butterflies of Sequoia National Park", Bull. So. Calif. Acad. Sci., 1944: "Some Butterflies of the Mountains of Eastern Arizona" (with E. Yale Dawson), Ent. News, 1944, for gratis distribution to Lep. Soc. members. We still have copies of the reprints listed in the Lep. News 3: p.24, except "The Rothamsted Light Trap." U.S.A. members please include postage when writing.

DEALERS IN ENTOMOLOGICAL LITERATURE

Since the accuracy of investigations of Lepidoptera (whether of taxonomy, life history, distribution or otherwise) is partly dependent on having available as good books and periodicals as the lepidopterist can afford, it may be of value to many Society members to know the names and addresses of several dealers in entomological literature. Those known to us at present are listed below:

1. I.C. Adams, Jr., 3 North Glenwood, Columbia, Mo., U.S.A. Occasional mimeo. lists; papers and less expensive books.

2. Antiquarian Booksellers, Postbox 5, Lochem (G.), NETHERLANDS. Very large stock, specializing in old and rare books; prices average.

3. F.N. Bassett, 722 N. Orange Dr., Los Angeles 38, Calif., U.S.A. Occasional lists; papers and less expensive books.

4. Éditions N. Boubée & Cie, 3, Place St. André-des-Arts, Paris (VIe), FRANCE. Many French insect books, including "Atlas des Lépidoptères...".

5. E.J. Brill, Publishers, Leiden, NETHERLANDS.

6. John Q. Burch, 1584 W. Vernon Ave., Los Angeles 37, Calif., U.S.A. Frequent mimeo. lists; fine lots mainly of papers.

7. Henry G. Fiedler, 31-33 E. 10th St., New York 3, N.Y., U.S.A. Occasional catalogues of books; insect offering small but prices fair.

8. Andr. Fred. Host & Son, Bredgade 35, Copenhagen, DENMARK. Occasional catalogues of rare and less expensive books; huge stock, prices reasonable.

9. Dr. W. Junk, Publishers, Van Stolkweg 13, The Hague, NETHERLANDS. Agents for Lepidopterorum Catalogus and other large works; expensive.

10. Bernard Quaritch, Ltd., 11 Grafton St., New Bond St., London, W.1, ENGLAND. Occasional catalogues; many rarities but prices very high.

11. G. Schmidt, 257 Hillside Ave., Leonia, N.J., U.S.A. Occasional lists; prices reasonable.

12. John D. Sherman, Jr., 132 Primrose Ave., Mt. Vernon, N.Y., U.S.A. Occasional catalogues; most extensive entomological stock, but prices often exorbitant.

13. Wheldon & Wesley, Ltd., 83/84 Berwock St., London, W.1, ENGLAND. Occasional catalogues; large stock, esp. rare books. Prices reasonable.

Many of these dealers welcome requests to search for desired literature not listed in catalogues, and all are glad to place on their mailing lists individuals who are potential customers.

C.L.R.

Since this paper sets forth a modified classification and attempts to erect a new name for the order containing the Lepidoptera, it requires more than the routine notice in the Recent Literature section.

The Kiriakoff classification may be summarized as follows:

Superorder PANORPAEFORMIA

Order MECOPTERA
Order AMPHIESMENOPTERA Kiriakoff, nov.
- Suborder ZEUGLOPTERA (Micropterygidae)
- Suborder TRICHOPTERA (Caddis-flies)
- Suborder LEPIDOPTERA
  - Supercohors HOPLOSTOMATOPTERA Kiriakoff, nov.
    - Family Eriocraniidae
    - Family Mnesarchaeidae
  - Supercohors APLOSTOMATOPTERA Kiriakoff, nov.
    - Superfamily Hepialoidea
  - Supercohors NANNOLEPIDOPTERA Kiriakoff, nov.
    - Superfamily Nepticuloidea
  - Supercohors EULEPIDOPTERA Kiriakoff, nov.
    - Cohors STEMMATONCOPODA
      - Subcohors INCURVARIIFORMES
        - Superfamily Incurvarioidea
      - Subcohors TINEIFORMES
        - Superfamily Tineoidea
      - Subcohors GELECHIIFORMES
        - Superfamily Gelechioidea
      - Subcohors PYRALIDIFORMES
        - Superfamily Pyralidoidea
        - Superfamily Hesperioidea
          - Family Hesperiidae
          - Family Thyrididae
          - Family Pterophoridae
    - Cohors HARMONCOPODA
      - Subcohors PAPILIONIFORMES
        - Superfamily Bombycoidea
        - Superfamily Papilionoidea
        - Superfamily ?
      - Subcohors SPHINGIFORMES
        - Family Sphingidae
      - Subcohors NOCTUIFORMES
        - Superfamily Zygenoidea
        - Superfamilies ?

Kiriakoff begins by reviewing the work of some of the authors who have endeavored to classify the Lepidoptera with their true relatives, notably Handlirsch, Krausse & Wolff, and Hinton. He then erects a new order, AMPHIESMENOPTERA, with the suborders Zeugloptera (= Micropterygidae), Trichoptera (Caddis-flies), and Lepidoptera (sens.str.). The new "order" is grouped with the Mecoptera (Scorpionflies, etc.) as the Superorder Panorpaeformia.

The next concern is with the divisions of his Lepidoptera, and Kiriakoff concludes that four groups are necessary (he uses the term "supercohors" for this category). Following Hinton, he accepts the Eriocraniidae and Mnesarchaeidae as one group. Extracting two of the three main lines from Monotrysia of Hinton's phylogenetic tree (see Lep. News 1: p.33), he makes the Hepialidae and Nepticulidae each a supercohors. Hinton's third line of Monotrysia (Incurvariidae) Kiriakoff lumps with the remaining Lepidoptera (Ditrysia) as the fourth supercohors, considering the proleg structure more important than the monotreme condition. Similarly based on the prolegs, the fourth group ("Supercohors EULEPIDOPTERA") is divided into two cohors:- the Stemmatoncopoda (most of the "Micros" and the Hesperiidae) and the Harmoncopoda (= the "Macrolepidoptera").

For many years the primitive characters exhibited by the Micropterygidae have concerned systematists. The close affinity of the Trichoptera (Caddis-flies) and the Lepidoptera has been recognized by numerous workers and perhaps best demonstrated by J.H. Comstock and R.J. Tillyard, and the annectant position of the Micropterygidae between these two groups has been emphasized often. H.E. Hinton's 1946 paper suggesting a separation of the micropterygids from the Lepidoptera and Trichoptera was reviewed in the Lep. News, vol.1: pp.33-34; 1947.

Kiriakoff in the present paper reexamines the whole question. The reviewer's primary criticism is that this elaborate article gives almost no new evidence but rather gives a slight regrouping after repetition of the arguments of previous authors who had studied actual specimens. Nevertheless, it is valuable to have the information collected for us.

The second point of criticism concerns a deplorable nomenclatural procedure:- the blithe erection of new names for higher categories without any heed for application of general nomenclatural principles in treating the names already existing. As long as each new slightly different classification is filled with a new set of names, stability in the nomenclature of higher categories will be impossible. It is not necessary to wait for a formal rule in the International Code to treat this problem sanely.

Kiriakoff's Superorder Panorpaeformia, erected in 1946, is not a tenable group. The evidence from the fossil record is hardly contestable that the Diptera are direct descendants of one line of the Mecoptera. There are Mesozoic Australian insects which are essentially "four-winged Craneflies". Therefore any "superorder" containing Mecoptera must include also the Diptera (Two-winged Flies) and their close relatives the Siphonaptera (Fleas).

AMPHIESMENOPTERA as a category is quite unnecessary. Why quibble over the controversial rank of Caddis-flies and Moths & Butterflies (order vs. suborder)? They have conveniently been considered orders for so long that such a course seems worth continuing and does little or no violence to the facts.

Kiriakoff here reiterates his view that the Hesperiidae are not related to the butterflies, but rather to the Thyrididae and Pterophoridae, a view which needs testing by other morphologists.

Among the papers of Packard, Comstock, Handlirsch, Tillyard, Forbes, Braun, Heymons, Meyrick, Börner, Hinton, and now Kiriakoff, we must have virtually all possible random combinations of the major groups of the Lepidoptera, and with several possible names for each group. We should now be in position to achieve with some permanency a convenient, phylogenetic classification on which general agreement exists.

C.L. Remington

* See Recent Lit. #129 on p.57, above, for full citation and abstract.

A BRIEF HISTORY OF LEPIDOPTEROLOGY IN MISSOURI

by Edwin P. Meiners
St. Louis, Missouri

The first entomologist to explore the region of Missouri, of whom we have any record, was Thomas Say. Say was naturalist to Maj. Stephen H. Long's first expedition to the Missouri River and the Rocky Mountains. The expedition left Pittsburgh in May of 1819, sailing down the Ohio River in the steamboat, "The Western Engineer". They then ascended the Mississippi to St. Louis, where they remained about a week, making final preparations for the trip up the Missouri. During this stay Say and his companions explored the region around St. Louis, paddling a canoe up the Meramec River for about 15 miles, making the return trip overland.

Having completed their preparations, the expedition sailed up the Missouri to near Council Bluffs, Iowa, where they remained for the winter. Frequent stops were made on the way for fuel and provisions, permitting the party to make explorations of the surrounding territory. The results of Say's collecting are scattered through his writings. Usually only "Missouri" is given for locality data and, as the State had not yet been outlined as a political division, this may refer to any area along the route of the expedition.

Another member of the Long expedition was Titian Ramsey Peale, who acted as journalist and assistant naturalist. Peale's diary (Missouri Historical Review 41: pp.147-162, 266-284; 1947) gives a detailed account of the expedition's adventures from Pittsburgh to their arrival at Fort Osage, near the present city of Kansas City, Missouri. His only published work on insects, Lepidoptera Americana, never went beyond the first installment. Many of the illustrations in Say's work were drawn by Peale.

The first notice of any of the Lepidoptera of Missouri was a short account of the ravages of the Army-worm (Leucania unipuncta) which appeared in 1861 (Trans. Academy of Science St. Louis 2: p.159). This article was written by F.A. Wislizenus, the species being referred to as Bombyx graminis. Dr. Wislizenus was a native of Germany and practiced medicine in St. Louis. He was one of the organizers of the Western Academy of Science in St. Louis, the first academy of science west of the Allegheny Mountains, as well as of the Academy of Science of St. Louis, its successor.

In 1868 the Missouri State Board of Agriculture was authorized to establish the office of State Entomologist, this being the third State of the Union to create such a post. Upon the recommendation of B.D. Walsh, State Entomologist of Illinois, C.V. Riley was appointed to this position. Riley remained in office for nine years, after which time he transferred to Washington to head, first, the Entomological Commission, and later the Bureau of Entomology. During this time he published nine Annual Reports which have since become classics in the literature of American Entomology. He also published a journal, The American Entomologist, which was discontinued at the end of the second volume, and numerous papers in entomological and farm journals of the day.

Many of Riley's articles dealt with the Lepidoptera. The large collection of insects of all orders which he built up went with him to Washington, eventually forming the nucleus of the insect collection in the U.S. National Museum. (See Lep. News 1:p.56).

Riley enlisted the help of a number of persons having some entomological knowledge as his assistants. Notable among these was Mary E. Murtfeldt. Miss Murtfeldt (see Lep. News 2: p.83) was chiefly interested in the Microlepidoptera, of which she had quite a considerable collection.

Three papers by R.R. Rowley of Louisiana, Missouri, on the butterflies of this state appeared in Entomological News for 1891. A number of his other articles appeared from time to time in the same journal until about 1913, the later ones treating chiefly of the Catocalae, describing the early stages of many species. Prof. Rowley was Superintendent of Schools at Louisiana. He was interested in both Lepidoptera and invertebrate fossils and had large collections of each. His favorite collecting ground, "Catocala Hollow", became well known to readers of Entomological News of some 35 - 40 years ago, through the frequent references in his articles.

Living in Louisiana, Missouri, at about this same time were two brothers, G.M. and E.A. Dodge, who had come under the influence of Rowley and became great Catocala enthusiasts. G.M. Dodge described Catocala titania in 1900, one of the smaller species of the genus. In about 1909 E.A. Dodge moved to Santa Cruz, California, where he became actively interested in the butterflies, a number of new species and forms being named in his honor.

The first regional list of the butterflies of Missouri appeared in 1894 under the title "A List of the Butterflies found at Marshall, Missouri", by Oliver J. Staley. Staley practiced law at Marshall, collecting butterflies as a hobby. He died at the early age of 24 years by accidental drowning. Frank J. Hall, of Kansas City, Missouri, reported some unusual captures of butterflies in northwest Missouri, in Ent. News for 1898.

Two organizations which came into existence in St. Louis at about the turn of the century did much to foster the study of insect life in this community. The St. Louis Naturalists Club was organized in 1898 and recently celebrated its golden anniversay. The St. Louis Entomological Club, organized in 1906, is no longer in existence.

Another collector, Hermann Schwarz, member of both of the above clubs, deserves more than a passing mention. Possessed of a kindly nature and a dynamic personality (Rau's "Portrait", Bull. Brooklyn Ent. Soc. 39: p.89; 1944, is biased to an extreme), he held a considerable influence over the younger generation of naturalists in his community for many years. He was greatly interested in the Lepidoptera during his earlier years and built up a fine collection of the butterflies of Missouri, containing some

remarkable and unique captures for the State. Later he founded the Mid West Nature Study Supply Co. and designed some rather interesting equipment for the collector, notably, a sectional specimen cabinet and a plastic mount for Lepidoptera. An early paper on "The Art of Collecting Catocalae" (Ent. News 10: p.256; 1899), in which he advocated the use of a small bow and arrow tipped with a needle, may bring a smile from the present day collector, but he insisted that it was practical and that he had become adept in its use. In 1907 (Ent. News 18: p.312) Hermann Schwarz, in collaboration with Henry McElhose, published a "List of 110 species and varieties of butterflies taken by members of the St. Louis Entomological Club in the vicinity of St. Louis, Missouri". In spite of its many inaccuracies, this remains the only published list of the butterflies of Missouri. McElhose was principally interested in the Microlepidoptera. He later moved to Ilion, N.Y.

Several papers on the Catocalae by Ernst Schwarz appeared in Entomological News between 1915 and 1919. A number of new species and varieties were described. Ernst was a brother of Hermann Schwarz; a third brother, Fred Schwarz, was also a collector of Lepidoptera.

Paul A. Schroers published a list of the moths of St. Louis and vicinity in 1913 (Ent. News 24: p. 460; 25: p.59) which also is the only published list of Missouri Heterocera to date. He had a small collection of Lepidoptera, chiefly local species.

Others of this period who had small collections were Richard S. Lange and Frank Malkmus. August Knetzger was especially interested in the Hesperiidae and contributed short articles to Entomological News, Lepidopterist, and Lepidoptera. His collection is now in the museum of Pere Marquette State Park, Illinois. Adolph Wilkus had a large collection of the showy Lepidoptera of the world, beautifully mounted in Riker type mounts, but alas! without data. George H. Hosenfelt had a small collection of butterflies and moths which contained some rarities, one of which was a specimen of Samia cecropia with five wings. (Ent. News 24: p.337; 1913).

Phil Rau was chiefly interested in insect behavior, especially of the Hymenoptera, but published a number of articles on Lepidoptera, especially on the Saturniidae (see Lep. News 2: p.62; 1948).

Charles L. Heink was an enthusiastic collector who built up quite a large collection of the butterflies and moths of the world. He began collecting about 1902 and carried on an extensive correspondence and exchange with many of the noted lepidopterists of his day. In 1907 he organized the Heink Entomological Club, which ceased to exist about 1916. His only published work was a short note (Ent. News 14: p.334; 1903) on collecting at Meramec Highlands, Missouri. The major portion of his collection passed into the hands of the writer in 1926.

F. Roy Dean was an amateur lepidopterist and taxidermist. He contributed several short articles to Lepidoptera in 1918, including the description of two aberrant butterflies. Mrs. Vitae Kite, who lived in Hollister, Taney County, Missouri, in the heart of the Ozarks, had a collection of about 10,000 specimens of butterflies and moths. She published "A Calendar of Ozark Butterflies" in Entomological News for February, 1934. Although many of her determinations are open to confirmation, it is still the only published list of the butterflies of southern Missouri. Her collection is now in The School of the Ozarks, at Point Lookout, Missouri.

It may be a surprise to many to learn that Vance Randolph, the folk-lorist of the Ozarks, was at one time interested in the Lepidoptera. In 1919 he contributed an article on the "Life History and Habits of Dione vanillae" (Trans. Kans. Acad. Sci. 30: p.351) and in 1927 ("On Seasonal Migrations of Dione vanillae in Kansas" (Ann. Ent. Soc. Am. 20: p.242). A former Ozarkian is Dr. Auburn E. Brower who got his start in Willard, Missouri. In 1930 he published "A List of the Butterflies of the Ozark region of Missouri" (Ent. News 41: p.286). George E. Moore formerly collected butterflies in the vicinity of Lebanon, Missouri. He published, in 1937, "An Annotated List of the Butterflies of Laclede County, Missouri" (Proc. Mo. Acad. Sci. 3: p.108).

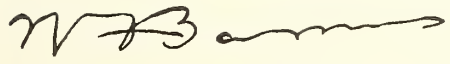
There are few lepidopterists remaining in Missouri at the present time. Harold O'Byrne, of Iberia, Mo., resided in Webster Groves for many years. He had an excellent collection of North American Lepidoptera, principally from Missouri. He formerly contributed a number of articles to the literature.

B.H. Pickel resides in Overland, Missouri, a suburb of St. Louis, and is interested in collecting North American butterflies. Oskar Zielinski was at one time an enthusiastic collector of North American Lepidoptera and resided in St. Louis. A few years ago he moved to California.

The Remington collection, formed by P. Sheldon Remington and son, Charles, is outstanding in this section of the United States. It consists principally of North American butterflies, representing a large proportion of the species, many in good series. P.S. Remington received much of his love for entomology from his contacts at the Boston Society of Natural History in his youth and, influenced by such masters in the technique of mounting as the Denton brothers, his collection is a model in the perfection of the specimens and the beauty of arrangement.

The writer's collection of insects is a miscellaneous one consisting, in large part, of Lepidoptera, both butterflies and moths. Other orders are represented to a lesser degree, mainly of the Missouri Ozark fauna, a region which has a fascination for him. No attempt at completeness has ever been made and he cannot say that he has in any way ever advanced the science of entomology to any degree. The lure of the Great Outdoors, contacts with his fellow men of like instincts (and many have been most interesting, believe me!), a knowledge gained of strange forms and curious habits, and the influence that insects have had upon the human race, have been goal enough. Ah-ha! an "escapist"!

Photo. Ent. News 40:p. 247. 1929.



BRIEF BIOGRAPHIES

18. William Barnes (1860-1930)

In writing a biography of a comparatively contemporary lepidopterist, the most important source of information, especially on the more personal aspects, lies in the recollections of the subject's associates. This is especially signficant since the usual obituaries, or biographies of the person during his lifetime, are understandably one-sided or incomplete. In the present biography, the writer was invaluably aided by two of Barnes' associates -- men who worked in close contact with him for a number of years, and both of whom are authorities on the Lepidoptera: Dr. James McDunnough, retired Chief of the Systematic Unit of the Division of Entomology of the Canadian Department of Agriculture and now a Research Associate at the American Museum of Natural History in New York; and Dr. Arthur W. Lindsey, head of the Department of Biology at Denison University, Granville, Ohio. The availability of first-hand information makes it appropriate to devote more than the usual amount of space to this Brief Biography. The quotations contained in this article were taken from letters written by Drs. McDunnough and Lindsey to the writer.

William Barnes was born in Decatur, Illinois, on September 3, 1860. After attendance in the local public schools, he studied at Harvard College, from which he graduated in 1883. While Barnes was in Cambridge, Samuel Hubbard Scudder, the great lepidopterist, was active there, and Barnes undoubtedly became acquainted with him during meetings of the Cambridge Entomological Club. Prof. F.M. Carpenter, of Harvard University, keeper of the records of the Cambridge club, kindly provided us with the following information: "On looking into the Club records, I find that Barnes was elected to membership November 12, 1880. The next few meetings of the Club were held in his room, 31 Thayer Hall,[Harvard College]. He remained an active member, attending about half the meetings, until February, 1884, when he withdrew from membership." As a boy, Barnes had started a collection of Lepidoptera, and the stimulation of such authorities as Scudder during his college years must have furthur fired his enthusiasm for lepidopterology.

In 1886 Barnes received a diploma from the Harvard Medical School, and then continued special studies in medicine at the University of Heidelberg (Germany) and at a university in Paris. This education provided the thorough training for his career as an outstanding surgeon. The foregoing facts should be kept in mind, for "to understand Barnes completely, it should be recognized that he was first and foremost a successful surgeon and that Lepidoptera was his hobby started in early youth."[1] He was a founder of the Decatur and Macon County Hospital. Barnes married Charlotte Gillett in 1891; a son and daughter completed the family. After a long medical career, Barnes retired in 1929 because of illness. He died in Decatur on May 1, 1930.

Since one of "Barnes' greatest contribution[s] to Entomology might be summed up as consisting in his willingness to spend large amounts in building up a splendid collection of Lepidoptera, adequately named and looked after",[1] it is appropriate to describe in some detail his collection. Dr. McDunnough, who became the first curator of the collection, writes: "The collection as I first knew it (1909) was contained in a narrow annex to the library room of his residence; later (about 1913), the special museum was built." The one-story building was erected at the rear of Barnes' home, and was constructed to be safe against damage by fire and moisture, two great enemies of irreplaceable specimens. The collection contained about 465,000 specimens, as follows: 35,000 butterflies, 170,000 moths, and 250-260,000 duplicates and unworked material. There were over 6000 types (including races, forms, aberrations, etc.). "His main idea was to secure as complete a collection of correctly named N.Am. Lepidoptera as possible, and with this end in view he was constantly exchanging or buying specimens from other lepidopterists and securing by purchase com-

[1] McDunnough, in litt.

plete season's catches by collectors in California, Arizona and other S.W. States. ... The main collections purchased in toto were the Merrick; Taylor; and Poling Catocalas; he secured a large portion of the Kearfott Micros..."[2] He also had much of the Oberthür North American material. Barnes "personally collected while at Harvard as material in collection 'Newton Highlands, Mass.' testifies. He also collected with Bruce at Denver and Glenwood Springs, Colorado, in 1893-4 and possibly in other years, but to my knowledge he made no trips after 1909 except one in 1917 to the Lake Tahoe region of California. ... He did however, make many trips to eastern museums (U.S.N.M.; Phil. Acad.; J.B. Smith; Am.Mus., etc.) and donated and received in exchange many specimens from these institutions."[2] A large entomological library, especially rich in lepidopterological literature, accompanied the collection.

"Anyone was welcome to use the remarkable facilities of his collection and library," wrote Dr. Lindsey, "and he gave freely of his surplus specimens. I well remember my first visit to him when I was a graduate student. Toward the end he told Dr. McDunnough to show me the duplicate collection and let me pick out whatever I needed. That was his common attitude. But if anyone misused the privilege, there was no reinstatement in Dr. Barnes' good opinion. He always suspected Strecker of stealing two types and describing them — the name proved to be a synonym! — and he was a bitter enemy of Dyar because a lot of unworked material lent to him at the U.S.N.M. never came back to Decatur."

In 1920, Barnes deeded the collection to the Decatur and Macon County Hospital, with the understanding that after his death it was to be sold and the proceeds used for child welfare. The collection was obtained by the U.S. National Museum, and it is still a major part of its Lepidoptera collection.

Barnes employed several successive full-time curators, -- men who were trained lepidopterists,-- "whose main duties, apart from the maintenance of the collection were to straighten out synonymic tangles, prepare revisions of groups and describe the numerous new species constantly met with in the material received from his collectors."[2] Dr. James McDunnough was the first curator, and was employed there from 1909 to 1919. He was followed by Dr. A.W. Lindsey from 1919 to 1921. Dr. Lindsey remarks: "After I left Dr. Barnes in the summer of 1921 he secured a young man from New York who lasted a very short time." Foster H. Benjamin was employed some time thereafter and remained until 1927. Research results were published during these periods under the joint authorships of Barnes & McDunnough, Barnes & Lindsey, Barnes & Benjamin, and Barnes & Busck. A fair example of the widespread viewpoint about Barnes is J.D. Gunder's statement (Ent. News 40: p.245; 1929): "It can also be said that he has accomplished more general taxonomic work in the order ['Strictly Boreal American...'] than any other living man." Therefore, the light shed on these coauthorships by two of the men concerned is especially revealing, and it has not been published in previous accounts of Barnes. Dr. McDunnough writes: "With regard to publications, Barnes only prepared papers appeared in Canadian Entomologist 1901, 1904, 1905, etc. and Entomological News, vol.11. After 1909 his curators were entirely responsible for articles in journals and for the entire five volumes of the 'Contributions'. This latter publication was financed by Barnes' sister-in-law, Miss Jessie Gillett. Barnes' name, as owner of the collection, appeared as a courtesy to the man who paid the curators' salaries. A single paper, published under Barnes' name in Pan-Pacific Entomologist, vol.5, no. 1, in 1928 was probably prepared for the most part by Benjamin. The Check Lists were also the work of the curators. Barnes, in my time, never did any lengthy studies on the Lepidoptera; he used to drop in in the morning and usually for a short time in the evening to discuss work, etc., and when time was available, spent it studying Phalaenids, particularly members of the genus Euxoa in which he was greatly interested."

Dr. Lindsey agrees with the above information, saying: "Dr. Barnes' work in entomology was chiefly the lavish support of collectors and the provision of a superb opportunity for the research done by his curators. He described some species, but did no actual taxonomic research as far as I know. From my experience with the revision of the Pterophoridae, I judge that all of the publications from the museum were the work of the curators even though they were published under joint authorship with Dr. Barnes. I do not say this critically, for the opportunity that he provided was itself a major contribution to the science."

The "Contributions" mentioned above were fully titled "Contributions to the Natural History of the Lepidoptera of North America", and were privately published in five volumes. The work included descriptions, revisions, etc.,and was well-illustrated. "Probably the most important works published [by Barnes] are the 'Contributions' and 'Illustrations of North American Catocalas' issued as a Monograph by the American Museum of Natural History."[2] His Check Lists of 1917 and 1926 were widely used at the time, but are now, of course, out of date.

Dr. Lindsey offers a quite thorough and interesting description of Barnes personally in the following comments: "Dr. Barnes was a remarkable man. In appearance he was rather grim and in manner he was gruff and very profane. After my long experience with him I have wondered whether he may not have cultivated such an exterior as a protection, for he was kind hearted and generous and might easily have been susceptible to the demands of a thoughtless world. ... I heard many incidents of his relations with patients in his medical practice which bear out the idea that he had a tender heart, and I can vouch for his generosity in his scientific work."

The writer is very grateful to Dr. McDunnough and Dr. Lindsey for their invaluable assistance in providing biographical material of Barnes so that a true estimate of his place on the scientific scene could be established.

Jeanne E. Remington

[2] McDunnough, in litt.

RECENT LITERATURE ON LEPIDOPTERA

Under this heading are listed each month recent papers from all the scientific journals which are accessible to us and our cooperating abstractors. It is hoped eventually to make our coverage of the world literature as complete as possible. Members outside North America are urged to send us references of Lepidoptera papers from journals unavailable to us. Papers devoted entirely to economic aspects will be omitted. Reprints are solicited from all publishing members. Initials of cooperating abstractors are as follows: (P.B.)- P.F. Bellinger; (A.D.)- A. Diakonoff; (C.dP.)- C.F. dos Passos; (L.G.)- L.A. Gozmány; (C.R.)- C.L. Remington; (T.S.)- T. Shirôzu.

86. Beck, W., "Ein missglückter Anlockungsversuch mit Dasychira fascelina L." (In German.) Ent. Tidskr., vol.70: pp.111-113. 5 May 1949. Field notes. (C.R.)
87. Beebe, W., "Moth Nights at Rancho Grande." Animal Kingdom, vol.52: pp.34-40, 6 figs. Mar.-Apr. 1949. Popular account of fantastic abundance of moths at light at this spot in Venezuela, which is on a migration route. (P.B.)
88. Benoit, Pierre-L.-G., "La faune épiparasitaire des Braconides parasites de Sylepta derogata F. (Lépid. Pyral.) au Congo Belge." (In French.) Bull. & Ann. Soc. Ent. Belg., vol.85: pp.28-40, 4 figs. 3 Mar. 1949. Lists 12 species (3 new) of secondary parasites, attacking Braconid parasites of this moth. (P.B.)
89. Blackie, J.E.H., "The Butterflies of the Monks Wood District." Entomologist, vol.82: pp.54-58. March 1949. (P.B.)
90. Blackie, J.E.H., "Coenonympha tullia Müller: a Postscript." Entomologist, vol.82: pp.83-84. April 1949. (P.B.)
91. Bourgogne, Jean, "Les transformations subies par le fourreau de certaine Psychidae pendant la croissance de la chenille (Lep.)." (In French.) Bull. Soc. Ent. France, vol.53: pp.130-133, 7 figs. 24 Nov. 1948. Changes made in its case by the larva (Fumea sp.). (P.B.)
92. Bourquin, Fernando, "Metamorfosis de Automeris naranja Schaus 1898 (aurantiaca Weym.)(Lep. Het. Hemileucidae)." (In Spanish.) Acta Zool. Lilloana, vol.5: pp.69-79, 2 figs., 1 pl. 1948. Describes entire life history of A. naranja; host plants -- Feijoa Sellowiana, Lonicera, Ilex paraguariensis; virus disease discussed. Figs. of pupa and ♂ genitalia; photos of ♂ & ♀, ova, larva, cocoon. Notes in English by Carl Heinrich comprise pp.77-78; aurantiaca sunk under naranja, "naranja" of Seitz becomes ater Conte, 1906; best differences in ♀ genitalia; Heinrich gives keys to ♂ & ♀ of ater and naranja. (C.R.)
93. Bourquin, Fernando, "Notas sobre la metamorfosis de Megalopyge chacoma Schaus 1910 (Lep. Het. Megalopygidae)." (In Spanish.) Acta Zool. Lilloana, vol. 5: pp.113-115, 1 fig., 1 pl. 1948. Describes larva, pupa, cocoon of M. chacoma, host plant --Aspidosperma Quebracho-blanco. Parasite is Plagiotachina eurota. Figs. of pupa; photos of ♂ & ♀, larvae, cocoon. (C.R.)
94. Bourquin, Fernando, "Metamorfosis de Morpho catenarius argentinus Frühstorfer 1907 (Lep. Morphidae)." (In Spanish.) Acta Zool. Lilloana, vol.5: pp.117-130, 1 fig., 1 pl. 1948. Describes entire life history of M. argentinus; host plant -- Scutia buxifolia. Figs. of pupa, photos of ♂ & ♀, ova, larva, pupa. Larvae are gregarious and colorful. Larval period is 7 1/2 months! (C.R.)
95. Bourquin, Fernando, "Notas sobre la metamorfosis de Chloropteryx munda (Warren) 1897 (Lep. Geometr.)." (In Spanish.) Rev. Soc. Ent. Argentina, vol.14: pp. 137-140, pl.5, 1 fig. 25 Oct. 1948. Describes entire life history of C. munda; host plant-flowers of Baccharis salicifolia. Figs. of pupa, photos of ♂ & ♀, ovum, larva, pupa. (C.R.)
96. Braun, Annette F., "Elachistidae of North America (Microlepidoptera)." Memoirs Amer. Ent. Soc., no.13: ii & 110 pp., 26 pls. 30 July 1948. 57 spp. in 7 genera recognized. Described as new: genus ONCEROPTILA (type - Aphelosetia cygnodiella Busck), O. eremonoma (Eureka, Utah); genus HEMIPROSOPA (type - Eurynome albella Cham.); Elachista epimicta (Cincinnati, Ohio), E. symmomorpha (Tulare Co., Calif.), E. synopla (Cache Co., Utah), E. spatiosa (Loma Linda, Calif.), E. acenteta (Parrsboro, Nova Scotia), E. hololeuca (Penticton, B.C.), E. purissima (Summerland, B.C.), E. lamina (Peachland, B.C.), E. coniophora (San Diego, Calif.), E. hiberna (Pike Co., Ohio), E. fuliginea (Martha's Vineyard, Mass.), E. oxytypa (Bradore Bay, Que.), E. excelsicola (Mt. Washington, N.H.), E. nitidiuscula (Cincinnati, Ohio), E. leucosticta (Constance Bay, Ont.), E. amideta (Ottawa, Ont.); Cosmiotes scopulicola (Huron Mts., Mich.). Gives E. adempta as new name for Laverna albella Cham. Figs. of ♂ & ♀ genitalia, venation, pupae, ova, leaf mines include all n.spp. and all but 6 known spp. Keys to all genera and spp. Descriptions thorough, life history notes given where known, largely from Miss Braun's own study. Complete synonymic list and index given at end. A superb revision! (C.R.)
97. Brown, S.C.S., "The Mine of Stigmella subbimaculella Haw. (Lep., Stigmellidae)." Ent. Month. Mag., vol.85: p.45. Feb. 1949. (P.B.)
98. Bryk, Felix, "Zur Kenntnis der Grossschmetterlinge von Korea. Pars II." (In German.) Arkiv f. Zool., vol.41a, no.1: 225 pp., 7 pls. 1948. Describes as new: (NOTODONTIDAE) Stauropus basalis ssp. koreharpya, Pheosia tremula ssp. permagna, Notodonta jankowskii ssp. varidens, Spataloides doerriesi ssp. tristina, Rosama ornata ssp. paupera, Lophopteryx camellina ssp. signata, L. saturata hoegei f. discalis, Euhampsonia splendida ssp. chosennadata, Semidonta(?) bilobona (Shuotsu), Pygaera curtuloides ssp. korecurtula; (LYMANTRIIDAE) Dasychira fascelina ssp. moto, Lymantria dispar ssp. koreibia & ssp. kolthoffi, L. monacha ssp. chosenibia & matuta & lateralis & idae, Porthesia similis ssp. varabilina; (SATURNIIDAE) Actias artemis ssp. sjöqvisti, Antheraea yamamai ssp. bergmani, Caligula boisduvali ssp. intermedia; (BRAHMEIDAE) genus BRAHMAEOPS (type B. japonica Butl.), genus BRAHMIDIA (type B. hearseyi White), Brahmaea magnificentia*(Shuotsu); (DREPANIDAE) Drepana curvatula ssp. koreula, Albara scabiosa ssp. fixseni, Oreta pulchripes ssp. chosenoreta; (LASIOCAMPIDAE) Malacosoma neustrium ssp. chosensis, Dendrolimus segregatus ssp. corelimus, Metanastria undans ssp. chosenicola, Gastropacha quercifolia ssp. coreopacha, G. populifolia ssp. clathrata; (ARCTIIDAE) Parasiccia altaica ssp. coreana, Miltochrista rosacea ssp. shuotsuensis, Agylla gigantea ssp. chosengylla, Eilema depressa ssp. bergmani, E. angustiala*(Shuotsu), E. calmaria ssp. apricina, Phragmatobia fuliginosa ssp. chosensis, Diacrisia lutea ssp. rhododaktyla & f. luteiformis, D. seriatopunctata ssp. varians, D. jankowskii ssp. korearctia, Spilosoma menthastri ssp. elegans, D. sannio ssp. rubroventralis & f. roseivenata, Callimorpha histrio ssp.

98.(cont.) chosensis; (THYATIRIDAE) Saronaga albicostata ssp. koreonaga, Palimpsestis akanensis ssp. koreibia; (NOCTUIDAE) Panthea coenobita ssp. idae, Moma ludifica ssp. androtropa, Diphthera alpium ssp. kolthoffi, Acronycta alni ssp. korealni, A. rumicis ssp. rumicina, Panthauma egregia ssp. koreothauma, Metachrostis algae ssp. korealgae, M. niphadothauma*(Shuotsu), Euxoa intracta ssp. kurilintracta, E. oberthüri ssp. nominata, E. kaolina(Shuotsu), E. aquilina ssp. kaolicussa, E. kaolifeltia(Shuotsu)& ssp.anderssoni, Chersotis deplanata ssp. columbina, Agrotis corticea ssp. grammomima, A. agalmona(Shuotsu), Diarsia exusta ssp. noli-me-tangere, D. ruficauda ssp. steni & ssp. ottonis-bang-haasi, D. baja ssp. chosenbaja, D. signum ssp. melancholina, Cerastis sobrina ssp. shuotsensis, Blepharita amicissima(Shuotsu), Polia contigua ssp. olivaceula, P. persicariae ssp. minorita, P. conspersa ssp. chosensis, Harmodia corrupta ssp. siculimima, Aplecta mongolica ssp. koreaegena & ssp. chidisana, A. differenciata(Shuotsu), Hyssia cavernosa ssp. korebia, genus ERYTHROTIS (type E. cedermarki Bryk), E. cedermarki*(Shuotsu), Hyperiodes turca ssp. matsumuriana, H. grandis ssp. coreana & ssp. chidisana, Monima paramoea ssp. marginepicta, Sideridis velutina ssp. kukunoorensis, S. insecuta ssp. bergmani, S. sinuosella*(Motojondo), S. incognita ssp. draudtiphila, S. pallens ssp. chosenicola, Cucullia maculosa ssp. shuotsuensis & ssp. japonibia, Cosmia fulvago ssp. korecosmia, Amphipyra livida ssp. cupreina, A. tripartita ssp. parvula, Parastichtis funerea ssp. geminea, P. veterina ssp. coreina, Oligia arcta ssp. tegularis, Trachea atriplicis ssp. gnosis & ssp. tristina, Euplexia koreaplexia (Shuotsu), Callogonia virgo ssp. virginalis, Virgo datanidia ssp. parthenon, Elaphris morosa ssp. permorosa, Athetis furvula ssp. tristifascia, A. grisea ssp. kaolina, Psilomonodes venustula ssp. venerica, Apamea lucens ssp. motojondensis, Xanthoecia flavago ssp. koreago, Hydroecia micacea ssp. viola, Ipomorpha contusa ssp. pergrandis, Dadaica differenciata (Shuotsu), genus SPHRAGIDIFERA (emend. for Sphragifera Staud.), S. biplaga ssp. hexagona, Lithacodia fasciana ssp. coreana, Eustrotia candidula ssp. leechiana, Oruza chalcogramma (Shuotsu), Sinna extrema ssp. koresinna, Earias pupillana ssp. paginalis, Gelastocera exusta ssp. eminentissima, Ephesia dissimilis ssp. griseata, Eccrita mirabilis* (Shuotsu), Dermaleipa juno f. renalis, Parallelia mimula ssp. postfusca, P. algira ssp. japonibia & ssp. sinica, Cauninda annetta f. arabesca, Phytometra festata ssp. yokohamensis, P. festucae ssp. kurilensis & ssp. japonibia & ssp. kamtschadala, Toxocampa graciosissima (Gekatsungu), Chrysorithrum amatum ssp. amorina, genus CRINISINUS (type C. turbo Bryk), C. turbo (Shuotsu), genus HETEROSCOTIA (type H. stygia Bryk), H. stygia (Shuotsu), Rivula dubitatrix (Shuotsu), genus STEN-BERGMANIA (type Herminia albomaculis Brem.), genus SINARELLA (type S. stigmatophora Bryk), S. stigmatophora (Shuotsu), Zanclognatha tarsiplumalis ssp. chosensis, Z. tarsicrinata (Shuotsu), Z. triplex ssp. koreognatha, Z. perfractalis (Shuotsu), Bocana spacoalis ssp. chosenana, Rhynchina kengkalis ssp. warreni, Hydrillodes obscurans* (Shuotsu), Bomolocha chosenula* (Shuotsu), Hypena conspersalis ssp. koreaena; (GEOMETRIDAE) genus HETEROTHALERA (type H. "chlorosaria chosensis" Bryk), H. chosensis* (Shuotsu), Timandra amataria ssp. myokosana, Cosymbia albipunctata ssp. coreana, Problepsis superans ssp. coreana, Scopula convergens (Shuotsu), S. nigropunctata ssp. chosensis, Baptria tibiale ssp. pedicura, Heterophelps confusa ssp. confusidor, Hysterura declinans ssp. bergmani, Caleulype whitleyi f. leechi, Lygris fabiolaria ssp. korelygris, L. ledereri ssp. chosensis, Eustroma melancholica ssp. düreri, E. reticulata ssp. chosenicola, Gandaritis fixseni ssp. coreana, Loxofidonia muscicapata ssp. originalis, Cidaria postalbida ssp. problematica, C. minna ssp. otregimima, Euphyia luctuosaria ssp. sinuataria, E. unangulata ssp. gekatsungensis, E. secessa* (Shuotsu) & ssp. myokosana, E. yokohamae ssp. colorata, Hydromena vidua ssp. permagna, Ecliptopera chrysozona (Shuotsu), Melanthia procellata ssp. myokosanthia, Venusia cambrica ssp. shuotsu, Discoloxia blomeri ssp. euchloë, Diaprepesilla flavomarginaria ssp. djakonovi, Abraxas suspecta ssp. liliput, Ephoria arenosa ssp. chosenibia & ssp. gaby, Ennomos autumnaria ssp. koreennomos, Zethenia albonotaria ssp. nonnotata, Z. rufescentaria ssp. chosenaria, Angerona prunaria ssp. aquafortis & ssp. prouterona & ssp. mongoligena, Epione vespertaria ssp. hespera, Buzura superans ssp. koreaebia, Spilopera debilis ssp. chosenibia, Semiothisa shanghaisaria ssp. wehrliaria, Anticypella diffusaria ssp. bergmanaria, Boarmia athleta, ssp. nanaria, B. castigataria ssp. chosenarmia, B. maculata ssp. korearmia, B. repandata ssp. cioccolatina, B. extinctaria ssp. ferruginaria, B. marginata ssp. submarginata, B. conferenda ssp. referendaria, B. subdisciplens (Shuotsu), B. monochroma (Shuotsu), B. seitzi ssp. chosenibia, B. ornataria ssp. chosenicola, B. irroratata ssp. specificaria, B. selenaria ssp. kaolina, B. stipitaria ssp. kariuzawensis, B. crepuscularia ssp. bergmanaria, B. ignobilis ssp. shuotsuensis, Itame wauaria ssp. koreaebia, I. fulvaria ssp. coreame, I. distinctaria*(Shuotsu), Chiasma lutearia f. confluens; (ZYGAENIDAE) Elcysma westwoodi caudata ssp. eleganticauda (sic!); (COCHLIDIIDAE) Narosoideus flavidorsalis ssp. micans, Cnidocampa johani-bergmani (Shuotsu), Parasa sinica ssp. japonibia. All n.spp. and most n.sspp. from Korea. Photos of all n.spp. except those marked with asterisk (*). Photos of many n.sspp. Also gives records of many known ssp. and sspp. This paper seems to the reviewer a taxonomic nightmare certain to retard progress of Oriental lepidopterists, since all these names presumably have their types deposited in Europe. Descriptions usually brief, genitalia not mentioned. Location of types not stated, but perhaps Riksmuseum in Stockholm. Some clumsy names, such as ssp. ottonis-bang-haasi, ssp. noli-me-tangere, and the genus Sten-Bergmania. May systematics not be measured by such work! (C.R.)

99. Cockayne, E.A., "Aberrations of Hemerophila abrupta (Lep. Geometridae)." Entomologist, vol.82: pp.49-52, 1 pl. March 1949. Names 3 aberrations and discusses genetics of these forms. Normal and aberrant specimens figured. (P.B.)

100. Cockayne, E.A., "Aberrations of Abraxas grossulariata, L." Ent. Rec. & Journ. Var., vol.61: pp.33-34. Apr. 1949. Describes and names 4 aberrations. (P.B.)

101. Cockayne, E.A., & H.B.D. Kettlewell, "Selenia tetralunaria, Hufn., ab. nigrescens, ab.nov., with an account of its genetics." Ent. Rec. & Journ. Var., vol.61: pp.9-12, 1 pl. Feb. 1949. (P.B.)

102. Corbet, A. Steven, "Observations on the species of Rhopalocera common to Madagascar and the Oriental Region." Trans. R. Ent. Soc. Lond., vol.99: pp.589-607, 13 figs. 28 Dec. 1948. Evidence indicates that species common to the two regions colonized Madagascar by migration across the Indian Ocean. (P.B.)

103. Coutin, R., & P. Grison, "Hemichrysalides obtenues par ligature des chenilles de Laspeyresia pomonella L. (Lépid. Tortr.) en rupture de diapause experimentale." (In French.) Comptes Rendus Soc. Biol., vol.143: pp. 15-17, 1 fig. Jan. 1949. If larvae are ligatured in middle at correct time after raising them from a low to a high temperature, only the front half pupates. (P.B.)

104. Dannreuther, T., "Migration Records, 1948." Entomologist, vol.82: pp.73-78, 105-110. Apr.,May 1949. Survey of records, mainly from British Isles. (P.B.)
105. Darlow, H.M., "Insects Taken at Sea in 1948." Entomologist, vol.82: pp.63-68. Mar. 1949. Records of captures in the Mediterranean; mainly migrant Lepidoptera. (P.B.)
106. De Lucca, C., "Further Moth Captures from Malta." Ent. Month. Mag., vol.85: p.96. Apr. 1949.
107. Diakonoff, A., "Microlepidoptera from Indo-China and Japan. 2nd Note." Bull. Mus. Hist. Nat., vol. 20: pp.343-348, 4 figs. June 1948. Describes as new:Syndemis duplex(Tonkin); Eucosma pedisignata(Tonkin); E. fuscicaput(Tonkin). Genitalia figured. (P.B.)
108. DowdesWell, W.H., R.A. Fisher, & E.B. Ford, "The quantitative study of populations in the Lepidoptera. 2. Maniola jurtina L." Heredity, vol.3: pp.67-84, 2 figs. Apr. 1949. Study of three more or less isolated populations on small island. Variability, population numbers, and the bearing of the latter on survival of the species are considered. (P.B.)
109. Dufrane, Abel, "Une Acidalide intéressante pour la faune belge." (In French.) Lambillionea, vol.48: pp.50-52. Aug. 1948. New record: Scopula virgulata.
110. Dufrane, Abel, "A propos de la note de Bernard Meier 'Parnassius apollo L. de la Franche-Comté'." (In French.) Bull. Soc. Ent. Mulhouse, 1 Oct. 1948: p.65.
111. Dymond, J.R., "Important advances in Zoological Nomenclature achieved at the Thirteenth International Congress of Zoology, Paris, July, 1948." Can. Ent., vol.81: p.51. Feb. 1949. Summarizes some of the amendments to the Rules adopted last summer and speaks of them with approval. (C.dP.)
112. Evans, W.H., "Some new Hesperiidae (Lepidoptera) from Africa." Ann. & Mag. Nat. Hist., (ser.12),vol. 2: pp.54-56, 1 pl. 26 Apr. 1949. Describes as new: Celaenorrhinus kimboza (Tanganyika); Sarangasa gaerdesi (S.W. Africa); Gorgyra kalinzu (Uganda); Pelopidas fanta barnesi (Rhodesia). Adults and ♂ genitalia of the first three are figured. (P.B.)
113. Evers, Hans, "Zusammenstellung der Literatur über die Kleinschmetterlingsfauna der Nordmark." (In German.) Mitt. Faunistischen Arbeitsgem., vol.1 (n.s.): pp.75-78; vol.2 (n.s.): pp.8-9. Oct./Nov.1948; 1949. Bibliography of the 30 papers on Microlepidoptera of Nordmark (Germany). (C.R.)
114. Fearnehough, T.P., "Variation in reared Heodes (Lycaena) phlaeas." Ent. Rec. & Journ. Var., vol.61: pp.25-27, 1 pl. Mar. 1949. Variation in markings, color, and size described and figured. (P.B.)
115. Fischer, E., "Neue Kreuzungen mit Celerio lineata-livornica Esp." (In German.) Mitt. Schweiz. Ent. Ges., vol.21: pp.201-209, 3 figs., 2 pls. 25 Aug.1948. Results of a series of crosses, involving also C. euphorbiae, C. galii and C. vespertilio. Adults and larvae are figured in color. (P.B.)
116. Franclemont, John G., "Synonymical notes relating to Menopsimus caducus Dyar (Lepidoptera, Phalaenidae)." Proc. Ent. Soc. Wash., vol.51: pp.74-75. Apr. 1949. Reports that two distinct species have been confused under caducus, i.e., that species and Thalpochares fractilinea Smith, and distinguishes them. Selects a lectotype for caducus and gives the generic synonymy of Hypenodes, which is ascribed now to Doubleday, and of the species presently included in this genus, both with full references. (C.dP.)
117. Gaál, I., "With Collecting Net in the Upper Valley of the Latorca." (In Hungarian.) Roy. Közl., vol.2: pp.22-27. 1947. An account of a journey into the northeastern Carpathians, with faunistic data on Erebia aethiops-altivaga, Araschnia levana ab. porima, and Pieris bryoniae ssp. neobryoniae. (L.G.)
118. Gaál, I., "The Curious Northern Trend of Libythea celtis (Fuessl.) in the Carpathian Basin." (In German.) Frag. Faun. Hungarica, vol.11: pp.12-14. 1948. Notes on the sole Snout Butterfly of Europe, with special regard to Hungary, where it was formerly known only from the Adriatic seacoast, now pushing north to middle Hungary (Budapest). (L.G.)
119. Gergely, I., "Notes on Caterpillar Distribution." (In Hungarian.) Roy. Közl., vol.2: pp.43-48. 1947. Examples of the "flight" of caterpillars and of Lymantria dispar. (L.G.)
120. Greer, O.T., "Entomological Notes from East Tyrone 1948." Ent. Rec. & Journ. Var., vol.61: pp.27-28. Mar. 1949. Irish Lepidoptera. (P.B.)
121. Harrison, J.W. Heslop, "Rhopalocera in the Scottish Western Isles in 1948, with an account of two new forms of Pararge aegeria (Lep., Satyridae)." Ent. Month. Mag., vol.85: pp.25-28. Feb. 1949. Describes as new so-called subspecies P. a. oblita and P. a. monicae, both from Isle of Rhum. Both forms reared from single female! (P.B.)
122. Hinton, H.E., "On the Origin and Function of the Pupal Stage." Trans. R. Ent. Soc. Lond., vol.99: pp. 395-409, 1 fig. 8 Nov. 1948. Homologizes the pupa with the 'sub-imago' of mayflies; both are regarded as derived from the first imaginal instar, the imago being in reality the second. According to Hinton, the original function of the pupal stage was to permit development of imaginal muscles which could not develop in the larva. (P.B.)
123. Jacobs, S.N.A., "A fortnight's collecting in Switzerland (June/July 1948)." Ent. Rec. & Journ. Var., vol.61: pp.45-49. May 1949. Lepidoptera. (P.B.)
124. Janmoulle, E., "Remarques sur la faune belge." (In French.) Lambillionea, vol.48: pp.79-80; vol.49: pp. 19-20. Oct. 1948, Feb. 1949. New Belgian records for various rare moths. (C.R.)
125. Janmoulle, E., "Ematheudes punctella Tr. (Anerastiinae) espece nouvelle pour la faune belge?" (In French.) Lambillionea, vol.48: p.82. Dec. 1948.
126. Julliard, Charles, "Les parasites de la chrysalide de Vanessa urticae dans la region de Zinal (Valais)." (In French.) Mitt. Schweiz. Ent. Ges., vol.21: pp. 557-565, 4 figs. 27 Dec. 1948. 17 primary and 1 secondary parasites listed. Notes on biology of the parasites and percent of butterflies attacked. (P.B.)
127. Kadocsa, Gy., "The Sunflower-moth and how to Fight It?" (In Hungarian.) Roy. Közl., vol.2: pp. 33-37. 1947. On the biology of, and preventive means against, Homoeosoma nebulellum. (L.G.)
128. Kauffmann, Guido, "Zu Pyrgus alveus Hüb. (Lep. Hesperidae). Seine Flugzeiten und Generationen im Tessin." (In German.) Mitt. Schweiz. Ent. Ges., vol.21: pp.531-546, 12 figs. 27 Dec. 1948. Life cycle of alveus in southern Switzerland fully described. All stages and male genitalia figured. Food-plant is Helianthemum vulgare. (P.B.)
129. Kiriakoff, S.G., "A classification of the Lepidoptera and related groups with some remarks on Taxonomy." (In English.) Biol. Jaarboek, vol.15: pp. 118-143. 1948. Reviews and restates viewpoint that Micropterygidae are more remote from the "Lepidoptera s.s." than are Trichoptera, and therefore accepts term Zeugloptera for them. Then makes all three suborders of new order AMPHIESMENOPTERA. Divides Suborder Lepidoptera into 4 groups which he terms "supercohors" and gives new names: HOPLOSTOMATOPTERA (Eriocraniids); APLOSTOMATOPTERA (Hepialids); NANNOLEPIDOPTERA (Nepticulids); EULEPIDOPTERA (all others). The latter considered to include Cohors Stemmatoncopoda (most "Microlepidoptera") and Cohors Harmoncopoda (all "Macrolepidoptera"). (C.R.)

130. Kovács, L., "Euxoa hastifera (Donz.),and its Occurrence in the Great Hungarian Plains." (In Hungarian.) Rov. Közl., vol.2: pp.3-10. 1947. Account of the habitat of this rare moth in Hungary, with description of two new forms: hungarica; pomázensis. Treats the general problem of E. hastifera and E. obelisca (Hb.). (L.G.)

131. Kovács, L., "A New Roeselia Species from Hungary." (In Hungarian.) Rov. Közl., vol.2: pp.67-68. 1947. Describes as new Roeselia pannonica (Pomáz). Nearest relative: R. strigula. (L.G.)

132. Leeds, H.A., "Butterfly collecting in Wood Walton, Hunts., area, and the Chiltern Hills, during 1948." Ent. Rec. & Journ. Var., vol.61: pp.13-17. Feb.1949.

133. Lorkovic, Zdravko, "Chromosomenzahlen-Vervielfachung bei Schmetterlinges und ein neuer Fall Fünffacher Zahl." (In German.) Rev. Suisse Zool., vol.56: pp.243-249, 4 figs. Feb. 1949. A brief survey of supposed "polyploid series" in Lepidoptera. A case of quintuple polyploidy is reported: Erebia tyndarus, haploid number 8; E. ottomana, 40. Suggests that since these series occur only in closely related species, they have arisen "instantaneously." (P.B.)

134. Lucas, Daniel, "Contribution à la faune des Lepidopteres de l'Afrique du Nord." (In French.) Bull. Soc. Ent. France, vol.53: pp.88-90. 23 June 1948. Describes as new: Ptychopoda parallelolineatella(Tunisia); Syria trifasciatella (Morocco); Heterographis bedoella (Tunisia); H. aequalisella (Sfax); Staudingeria variegatella (Morocco). No figures. Also names 8 aberrations. (P.B.)

135. Owen, D.F., "The Macrolepidoptera of the Moorgate, London, Bombed Sites." Entomologist, vol.82: pp.59-62. Mar. 1949.

136. Picard, J., "Rectifications." (In French.) Rev. franc. Lépid., vol.11: p.335. June 1948. Corrects typographical error and sinks fritillarius Poda as nomen nudum, elevating Pyrgus carthami as name to be used. (C.R.)

137. Picard, J., "Les variations géographiques européennes d'Ochlodes venatum Bremer et Gray." (In French) Rev. franc. Lépid., vol.11: pp.338-340. Sept. 1948. Formerly known as Augiades sylvanus. Discusses the 4 races in Europe. (C.R.)

138. Picard, J., "Notes sur trois Pyrgus asiatiques du sousgenre Scolotrix (Lep. Hesperiidae)." (In French) Bull. Soc. Ent. France, vol.53: pp.114-118, 3 figs. 27 Oct. 1948. Notes on P. bieti, P. dejeani, and P. oberthüri. ♂ genitalia figured. (P.B.)

139. Rey, W., "Über Schmetterlings-Wanderungen." (In German.) Mitt. Schweiz. Ent. Ges., vol.21: pp.233-248. 25 Aug. 1948. Observations of migration, and a theoretical discussion of the problem. (P.B.)

140. Richardson, Austin, "Crymodes exulis ssp. assimilis and other Scottish Moths." Entomologist, vol.82: pp.79-82. Apr. 1949.

141. Rosentiel, R.G., "Life History and Control of the Orange Tortrix in Oregon." Journ. Econ. Ent., vol. 42: pp.37-40. Feb. 1949. Life history and habits of Argyrotaenia citrana. (P.B.)

142. Seiler, J., E. Humbel, & H. Amann, "Das sexuelle Mosaik diploider Intersexe aus der kreuzung Solenobia triquetrella x S. fumosella (Lepidoptera, Psychidae)." (In German.) Experientia, vol.5: pp.115-116. 15 Mar. 1949. Preliminary report of some experiments which conflict with Goldschmidt's theories of the mechanism of intersexuality.

143. Travassos, Lauro, "Contribução ao conhecimento dos 'Arctiidae'. XVII. Genero 'Thysanoprymna' Butler 1875." (In Portuguese.) Rev. Brasil. Biol., vol.9: pp.67-78, 31 figs. Mar. 1949. 6 spp. listed, 3 redescribed and figured in great detail. (P.B.)

144. Viette, P., "A propos du mimétisme de Trichura cerberus Pall. (Lep. Amatidae)." (In French.) Bull. Soc. Ent. France, vol.53: pp.139-140, 2 figs. 28 Nov. 1948. Resemblance to an Incheumon-fly described and figured. (P.B.)

145. Vintéjoux, Max, "Not sur deux Argynnes du Massif Central." (In French.) Rev. franc. Lépid., vol.11: pp.328-329. June 1948. New records for Clossiana titania and Brenthis hecate. (C.R.)

146. Wakely, S., "Recent entomological notes from South London." Ent. Rec. & Journ. Var., vol.61: pp.37-38. Apr. 1949. Lepidoptera. (P.B.)

147. Warnecke, Georg, "Aufruf zur Beobachtung von Wanderschmetterlingen." (In German.) Mitt. Faunistischen Arbeitsgem., vol.1 (n.s.): p.29-31. Mar. 1948. Lists, in categories, main migratory Lepidoptera of central Europe, outlines information needed in reports and requests records of 1947 migrations. (C.R.)

148. Warnecke, Georg, "Neuausbreitung von Schmetterlingen in Schleswig-Holstein und in Niederelbegebiet." (In German.) Mitt. Faunistischen Arbeitsgem., vol.1: (n.s.): pp.36-39. Apr. 1948. Discusses all known notable migrations in north-central Germany of 7 butterflies: Melanargia (= Satyrus) galathea, Epinephele (=Pyronia) lycaon; Pararge aegeria; Chrysophanus (=Lycaena) virgaureae; "Lycaena" amanda; Heteropterus morpheus; and Carterocephalus silvius. Some migrations records as old as 1864. (C.R.)

149. Warnecke, G., "Wichtigere Schmetterlingfunde bei Heide und Umgebung in den Jahren 1946 und 1947." (In German.) Mitt. Faunistischen Arbeitsgem., vol.1 (n.s.): pp.45-46. May 1948. Season summary for 1946 and 1947 for Heide, Germany. (C.R.)

150. Warnecke, G., "Neuausbreitung von Schmetterlingen in Schleswig-Holstein und in Niederelbegebiet." (In German.) Mitt. Faunistischen Arbeitsgem., vol.1 (n. s.):pp.46-48. May 1948. Continues previous account of Lepidoptera migrations in north-central Germany (see #148, above), with records for 10 moths: Pterogon proserpina; Agrotis interjecta; Dianthoecia compta; Leucania l-album; L. albipuncta; Orthosia rubricilla; Calophasia lunula; Plusia moneta; Eucosmia certata; and Boarmia gemmaria. (C.R.)

151. Warren, B.C.S., "Three hitherto unrecognized European species of Erebia (Lepidoptera: Satyridae)." Entomologist,vol.82: pp.97-104. May 1949. Discussion of some species of the tyndarus group. Describes as new E. sudetica inalpina (Switzerland). (P.B.)

152. Weber, P., "Flügelform und Geäder der europaïschen Gelechiidae." (In German.) Mitt. Schweiz. Ent. Ges., vol.21: pp.215-232, 3 figs., 16 pls. 25 Aug. 1948. Wings and venation of 68 genera described and figured. The characteristic features are also listed in tabular form, and a scale is provided by which the degree of angulation of a specimen's wings can be determined (a very useful idea!). Dr. Weber desires specimens of a number of other genera to complete his studies. (P.B.)

153. Winkler, W., "Herbstwanderungen von Pyrameis atalanta L. (Lep. Rhop.)." (In German.) Mitt. Faunistischen Arbeitsgem., vol.1 (n.s.): p.22. Feb. 1948. Migrations of Vanessa atalanta in Kiel, Germany, reported. (P.B.)

154. Winkler, W., "Einige bemerkswerte Schmetterlingsfunde 1948 in Schleswig-Holstein." (In German.) Mitt. Faunistischen Arbeitsgem., vol.1 (n.s.): p.75. Oct./Nov. 1948. Notes on Apatura iris, Araschnia levana, Hadena gemmea. (C.R.)

NOTICES BY MEMBERS

MICROLEPIDOPTERISTS! Wish to exchange: dried leaves containing insect MINES (all orders) accompanied by name of host plant (and of insect, if possible) and locality, etc. Offer European leaf-mines of Lepidoptera (and other orders if wanted). Exchange also in fruit-flies (Trypetidae). Dr. E.M. Hering, Reichensteiner Weg 21, Berlin-Dahlem (American Sector), GERMANY.

COLLECTION OF BUTTERFLIES & MOTHS for sale reasonably. World-wide in scope, but strongest in U.S.A. (esp. Colo., N.Mex., Ariz.) and European forms; emphasis on Noctuidae, Tortricidae, Nymphalidae, Hesperiidae. Collection spread on pins, and many unidentified papered specimens, all with full data. Collection to be sold as a whole. Sunie E. Wiegand, 2617 W. Sterner St., Philadelphia 32, Pa.

JAPANESE MOTHS offered in exchange for those of America and other countries,—especially Geometridae, Pyralidae, Sphingidae, and Noctuidae. Prof. Masao Azuma, Kōyō High School, Imazu, Nishinomiya, Hyogo Pref., JAPAN, or 1644, Rinkeiji, Arima, Kobe, JAPAN.

For sale: Boloria, Erebia, Oeneis & other Arctic and Far Northern species. Prices nominal. R.J. Fitch, Rivercourse P.O., via Lloydminster, Sask., CANADA.

Would like to exchange butterflies, large moths, and beetles of the world. Have many duplicates, including several thousand from tropics, with full data. Will be pleased to answer all correspondence. G.F. Schirmer, 2912 N. 45th St., Milwaukee 10, Wis.

SWISS BUTTERFLIES offered in exchange for species from elsewhere. Dr. A. Lorenz, Kasernenstrasse, Herisau, SWITZERLAND.

FOR SALE: THE "LIBRA-MOUNT"; a double-Riker-type mount in Book Form. Ruggedly built. Send for descriptive leaflet. Will consider exchange for Macro-Rhopalocera from all parts of the world, especially Papilio, Morpho, Ornithoptera, etc. Arthur Gatti, 63 W. 7th St., Mt. Vernon, N.Y.

Wanted: information on the distribution of Utah LYCAENIDAE in various collections. Please send notices of availability of material. John C. Downey, Biology Dept.,Univ. of Utah, Salt Lake City 1, Utah.

All sizes of black steel insect pins from Czechoslovakia for sale at $3.00 per 1000 or $25.00 for 10,000. Dr.H.Wilcke, Kössen/Tyrol,No.199, AUSTRIA.

AGENT WANTED IN U.S.A. who can sell our whole 1949 catch, to be collected in faunistically rich Khasi and Naga Hills of northern India; including butterflies and many other orders of insects. Total will be about 1,000,000 specimens. Please contact us for our terms. Himalayan Butterfly Co., Shillong, Khasi Hills, INDIA.

Have quantity of Madagascar Urania riphaeus, first quality papered specimens, for exchange by 100 or 1000. Also have Morpho amathonte, menelaus, aega, etc. by one or a dozen, and thousands of other butterflies for exchange, for what have you? Butterfly World Supply House, 289 E. 98th St.,Brooklyn 12, N.Y.

QUESTIONS AND ANSWERS

Q. "How can I go about finding Micropterygidae in New England? I need adults and especially larvae and pupae for studies of evolutionary position."

A. They are found on acid bogs and fly by day in early July. Look on flowers on and at the edges of bogs. So far as I know they are limited to cool zones (Canadian and perhaps Hudsonidan). I have never collected any in New England; but on Mt. Marcy they occur at about 3000 ft. elevation, and may be found in cool spots as low as 1000 ft. In my experience they are very rare. Larvae should occur earlier, but it is probably hopeless to look for them, assuming there might be a hundred or two in an acre of wet moss.

W.T.M. Forbes

Q. "I would be interested in knowing the basis for changing the name of our common silver-spotted skipper from Epargyreus tityrus (Fabr.) to Proteides clarus (Cramer). If I am not wrong both were described in 1775, tityrus by Fabricius in his Syst. Ent. and clarus by Cramer in his Pap. Exot.; if so, why has the long standing tityrus been discarded for the former synonym clarus? With the case of Epargyreus versus Proteides are not tityrus (= clarus), zestos, and exadeus genitalically homogeneous and distinct from mercurius (the logotype of Proteides)? I hope you can set me straight on this matter." (Ed. Note: Prof. Forbes referred this question to Mr. E.L. Bell.)

A. The reason for the use of clarus Cramer instead of tityrus Fabricius is that Papilio tityrus Fabricius (1775) is a homonym of Papilio tityrus Poda (1761), as pointed out by Hemming (1934. The Generic Names of the Holarctic Butterflies, p.159) and clarus Cramer is the next available name.

Yes, the male genitalia of clarus Cramer, zestos Geyer and exadeus Cramer are homogeneous and although of similar construction those of mercurius Fabricius differ in slight details. The genus Epargyreus and Proteides are very closely related and it seems to be a matter of inidividual opinion as to whether the differences between the generotypes, clarus and mercurius, are of sufficient importance for their separation.

Ernest L. Bell

Erratum: In preparation of the photographic copy of the Lep. News, vol.3, no.3: p.36, the following words were inadvertently omitted from the 5th line of Mr. Bell's answer, following the last parenthesis:

"of a second specimen".

Please note this erratum in your copy of the News.

LIVING MATERIAL

Wish to buy, exchange, or sell living Lepidoptera ova; Pseudohazis eglanterina ova especially desired. Mrs. Hazel Chase, 272 N. Union St., Galion, Ohio.

Living OVA for sale or exch. (in season): Citheronia regalis, Eacles imperialis, Platysamia gloveri, hybrid cecropia-gloveri, Actias luna, Automeris io, Telea polyphemus. Duke Downey, 51 W. 4th St.,Sheridan, Wyo.

NEW MEMBERS

Anderson, C.A., 3209 Centenary, Dallas 5, Texas. Danaus plexippus.

Azuma, Masao (Prof.), 1644, Rinkeiji, Arima, Hyogo-ku, Kobe, JAPAN. MACRO: esp. Geometridae. MICRO: esp.Pyralidae. Life Hist., Distribution. Coll. Ex.

Boone, Peter, 11 Edgehill St., Princeton, N.J. MACRO: esp. Sphingidae, Ceratocampidae.

Coy, L.P. (Dr.), 911 9th Ave., San Mateo, Calif. RHOP: esp. Speyeria, Euchloe. Coll. Ex.

Fulton, Macdonald (Dr.), Dept. of Biology, Univ. of Houston, 3801 St. Bernard St., Houston 4, Texas. RHOP. Coll.

Henstock, H. (Dr.), "Glengariff", Caerwys, N. Wales, GREAT BRITAIN. RHOP. British MACRO. Coll. Ex.

Hering, E.M. (Prof. Dr.), Zoologisches Museum, Invalidenstr. 43, Berlin N. 4, GERMANY. MACRO: Pericopidae, Zygaenidae, Dioptidae. MICRO. Leafminers of all orders. Coll. Ex.

Hessler, Robert, 6510 N. Campbell, Chicago 45, Ill. RHOP. MACRO. Coll. Ex. Buy.

Hoffman, James, 1039 S. Mulberry, Ottawa, Kansas. RHOP: Papilionidae, Pieridae, Nymphalidae. MACRO: Sphingidae, Saturniidae. Coll. Ex. Buy. Sell.

Howe, William, 822 E. 11th St., Ottawa, Kansas. LEPID: esp. Sphingidae and Catocalinae. Life History, Parasites. Coll. Ex. Buy.

Inoue, Hiroshi, 290, Miyamae, Oka-machi, Minami-ku, Yokohama, JAPAN. MACRO: Geometridae, Cymatophoridae, Drepanidae. Life History. Coll. Ex.

Jelinek, Anton, 3900 Diversey Ave., Chicago 47, Ill. RHOP: tropical, esp. Morpho & Papilio. Coll. Ex. Buy. Sell.

Lambert, Robert, Dept. of Lands & Forests, Bureau of Entomology, 53 Grande-Allee, Quebec, P.Q., CANADA. MICRO: esp. Tortricidae. Biology of forest Lepid. Coll.

Laspe, Charles G., 4044 Hawthorne, Palos Verdes Estates, Calif. RHOP: Papilionidae. Coll.

Loeliger, Robert (Dr.), Susenbergstrasse 20, Zürich, SWITZERLAND. RHOP. MACRO. Migration.

Mergott, Winston B., 549 Oxford Blvd., Pittsburgh 16, Pa. RHOP. MACRO. Coll. Ex.

Minot, George R. (Dr.), 71 Sears Rd., Brookline 46, Mass. RHOP. Coll.

Peace, Roger W., Jr., 6 Trumbull St., New Britain, Conn.

Schirmer, G.F., 2912 N. 45th St., Milwaukee 10, Wis. RHOP. Coll. Ex. Buy. Sell.

Schmela, Dora E. (Mrs.), 135 N. Evergreen Drive, Ventura, Calif. RHOP. Coll.

Seok, D.M., National Science Hall, Chung-ku, Seoul, KOREA. RHOP: esp. Pieridae.

Smith, Arthur C., Rockefeller Foundation, Calle de Viena 26, Mexico, D.F., MEXICO. RHOP. & MACRO: esp. of Mexico & Southwestern U.S.A. Ecology, Distribution. Coll. Ex. Buy. Sell.

Vrana, Richard, Laurel Hill Rd., Northport, N.Y.

Warnecke, Georg (Landgerichtsdirektor), Hohenzollernring 32, Hamburg-Altona, GERMANY. RHOP: Palaearctic. MACRO: Palaearctic, esp. Geometridae. Migration, Zoogeography. Coll.

Williams, Carroll M. (Prof.), Harvard Biological Labs., Cambridge 38, Mass. RHOP. MACRO: Saturniidae. Physiology of metamorphosis. Coll. Buy.

DECEASED

Keith, Edward D. (Rhode Island).
Lhomme, Léon. (France).

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Other inescapable duties have forced us to drop behind in replying to the very large number of letters received in the Society mail. Emphatically, our delay does not indicate disinterest. The enormous correspondence and the time-devouring labor of keeping financial records emphasize to us the urgent need of organizing the Society on a full-scale basis, with a substantial complement of elected officers to divide the pleasure and toil of leading the Society. We hope such a step may be taken for 1950.

Changes of address are being omitted, since the 1949 List of Members will be compiled in September.

THE LEPIDOPTERISTS' NEWS
The monthly periodical of the Lepidopterists' Society

Membership is open to all persons interested in any aspect of the study of butterflies and moths. The 1949 dues, including subscription to the NEWS, are $2.00 for Regular Membership and $4.00 or more for Sustaining Membership. Please make remittances payable to Charles L. Remington. Price for Vol. 2 is $2.00. No complete sets of Vol. 1 are available.

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The Lepidopterists' News

THE MONTHLY PERIODICAL OF THE LEPIDOPTERISTS' SOCIETY
c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

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SMITHSONIAN INSTITUTION
OCT 10 1949
NATIONAL MUSEUM

A VISIT TO THE HOME OF THE LATE WILLIAM HENRY EDWARDS AT COALBURG, WEST VIRGINIA

by Cyril F. dos Passos
Mendham, New Jersey

Early in 1948 a letter was received from Dr. Roy Bird Cook, Secretary of the West Virginia Board of Pharmacy, Charleston, West Virginia, concerning some manuscripts of William Henry Edwards(1822-1909). As is well known, Edwards, who spent many years of his life at Coalburg, was the author of that exquisite three volume work on the Butterflies of North America, and one of the leading lepidopterists of the Nineteenth Century. A short sketch of his life was published in The Lepidopterists' News (vol.1: p.8; 1947).

Dr. Cook's letter lead to considerable correspondence with him, and later with Mrs. John Augustine Willis of Coalburg, a granddaughter of Edwards, during which it developed that there was considerable unpublished material in Charleston and Coalburg relative to the entomological activities of Edwards. The upshot of the matter was that it seemed highly desirable to visit those places and examine the material firsthand. No opportunity arose to make the trip until this year.

On the afternoon of April 11 I arrived in Charleston and soon thereafter received a visit from Dr. Cook at my hotel. Together we went to the State Capitol Building where a large part of the Edwards' material is housed in the Library of the State Department of Archives and History, of which Mrs. Cook is the Directress. There I met Miss Miriam Woods, Librarian, who kindly showed me the Edwards' treasures. These are kept in the Document Section of the Department of Archives and History, having been given to the Library by the late William Seymour Edwards, only son of Edwards. They consist of some twenty-one entomological journals and notebooks to which there are three volumes of indexes. These are all bound in their original red leather bindings and record almost all of Edwards' observations, especially in rearing butterflies, between 1858 and 1894. Prior to the former date Edwards' interest had been chiefly in birds, and it was not until he was about thirty-six years of age that he turned to butterflies in earnest. In addition there are nine scrapbooks, mostly devoted to butterflies, about three hundred and fifty letters written to Edwards by lepidopterists from all over the world, and a number of miscellaneous books and papers. Truly, these apparently heretofore unrevealed documents are most valuable sources of information for the students of Lepidoptera.

Early the next morning Dr. Cook called for me and took me to Coalburg, which is about ten miles from Charleston. There I was received by Mrs. Willis in the house Edwards built when he moved there in 1869. The house is situated at the mouth of a wooded ravine where the land slopes gently in front to the Kanawha River. The first settlers had cleared away several acres, leaving a few large trees, but the forest covered the mountain down to the clearing. Edwards' home had a natural setting of mountain, hillside and river. I was shown through the rambling, white, two story frame house which has changed but little since it was built, except in the way of modernization. The Edwards were intent upon making their new home as beautiful as the one they had left on the Hudson. They laid out their garden carefully with beds and borders of old-fashioned flowers, roses and gay annuals to attract the butterflies, while fruit trees, berry bushes and a vegetable garden were planted on the hillside and at the river bottom. The view from the house up and down the valley and across the river is beautiful.

Behind the house rise the hills - rather steeply - and the land grades off rapidly on either side. It is in these hills that the coal seams were discovered that first brought Edwards to this section. The original coal mine still belongs to the family, Mr. John A. Willis being the President of the Coalburgh-Kanawha Mining Company which operates the property.

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dos Passos: EDWARDS' HOME- cont.

During the morning Mrs. Willis permitted me to examine some unpublished manuscripts of Edwards, his last journal, and some books from his library, among which is a beautifully bound three volume set of the Tenth Edition of Linnaeus' Systema Naturae. Later we were joined by Mrs. Willis' daughter, Miss Anne Edwards Willis, and at luncheon by Mrs. Willis' husband. After lunch Mr. Willis took me to see the mine and its tipple, then by automobile up the valley to admire the views and see one of the dams constructed on the Kanawha River in aid of navigation. That evening we were joined at dinner by Mr. and Mrs. John A. Willis, Jr., son and daughter-in-law of my host and hostess, and talked of Edwards and the early days in that section of the country. Previously I had met young Mr. and Mrs. Willis' two charming children, Charlotte and Douglas, great-great-grandchildren of Edwards.

After dinner Dr. and Mrs. Cook called and took me back to my hotel where, before going to sleep, I enjoyed reliving in my mind the experiences of the day - one that will be long remembered with deep gratitude to Dr. and Mrs. Cook and Mr. and Mrs. Willis and their family for their generous hospitality. Perhaps at a later date I may have something more to say concerning some of the manuscripts examined while at Coalburg.

On the way to Charleston by automobile, along the main highway, U.S. Route 21/60, west of Cedar Grove on the Kanawha River opposite Coalburg, a state marker has been erected reading -

"Coalburg

> Here was home of W.H. Edwards, naturalist and explorer, who led important expeditions to the Amazon in 1846 and was one of the leading authorities on butterflies and moths. He was a descendant of the renowned Jonathan Edwards",

from which spot one obtains a delightful view of the Edwards' home in its charming setting.

DANAUS RECORDS FOR "THE NEARCTIC BUTTERFLIES"

The Coordinating Editor, F. Martin Brown, requested records on Danaus and reported on the progress of response from Society members (Lep. News, vol.2: p.101; vol.3: pp.13,27). On our recent trip to Colorado, I visited Mr. Brown and saw his tabulations of the interesting Danaus records which have been submitted. However, I was impressed by the large gaps for D. plexippus, gaps which could easily be filled from the data labels on specimens in the collections of Society members. So I urge all members who have not yet sent records to Mr. Brown to do so before October 15 of this year. Please include dates of capture and try to give the county as well as exact locality. Of course, all records of Danaus from North America are welcome, but particularly for D. plexippus, the common and wide-ranging Monarch.

C.L.R.

RECORDS ON PAPILIO FLYWAYS

by Teiso Esaki
Fukuoka, Japan

The notes on the "Papilio Flyways" of Messrs. Ehrlich (Lep. News, vol.2: p.92) and Klots (vol.3: p.25) recalled to me some earlier references of the similar habit demonstrated by several Japanese species of Papilio. The earliest record may be traced back as early as in 1908. Miyake wrote (Trans. Ent. Soc. Japan, vol.2: pp.128-129; 1908), "many Papilio species use 'flyways' flying to and fro the same route. This habit is especially conspicuous in Papilio helenus. This butterfly flies early in the morning and towards the evening and is rarely met with on the wing during daytime. When it flies it uses always a definite route in either direction." Doi published (Insect World, vol.24: p.30; 1920) a note under the title, "On the 'butterfly way' " and described his observation on Papilio maacki made in Fushun, S. Manchuria. He observed on August 3, 1919, on a hill near Fushun the above-mentioned butterfly flying from northwest to southeast over the hill in the morning and to the reciprocal direction at 2 o'clock in the afternoon. He observed the same fact on the following day. He added some other observations on similar habit of Argynnis and Melitaea made in Korea. Okazaki gave some notes on the similar habit of Papilios observed by Satake in Japan (Insect World, vol.24: pp.102-103; 1920). Hamaguchi published notes on his careful observations on Papilio helenus made in Kochi, Shikoku, Japan (Insect World, vol.27: pp.298-302; 1923). He noticed that the flyway of the butterfly was definite every year in the same locality, unless obstacles occurred on the way. According to his many years' observations most individuals (82-83%) of Papilio helenus went in the morning and back in the afternoon the same route every day. He gave detailed notes on the variability of the route according to the location of flowers on the way to be visited by the butterfly, the seasonal difference (spring and summer generations), and on the special behavior of the "patrol butterfly", by which the author meant one or two butterflies which flew earliest in the morning every day.

This habit was since then often quoted in guidebooks of insect collecting in Japan and became fairly popular among butterfly hunters. They enjoy sometimes the "sitting collection" on the butterfly route in order to catch gorgeous swallowtails which may otherwise be rather difficult to capture.

BUTTERFLIES OF THE MALAY PENINSULA

A welcome correction must be made in my short obituary (Lep. News 2: p.79; 1948) of A. Steven Corbet, D.Sc., late Lepidopterist of the British Museum and well-known specialist of Malayan Rhopalocera. Mr. M.W.F. Tweedy, Director of the Raffles Museum, Singapore, kindly informs me that the 2nd Edition of Corbet & Pendlebury's book "Butterflies of Malay Peninsula" had been finished before Mr. Corbet's decease and that the complete manuscript has been entrusted with Mr. Tweedy. The book will be published in due course.

A. Diakonoff
Zoölogisch Museum, Buitenzorg, Java

A LIGHT TRAP FOR INSECTS*

by C.B. Williams, Sc.D.
Rothamsted Experimental Station
Harpenden, England

In 1923 I designed a light trap for insects, particularly for use in the Egyptian Desert. Since then a number have been made, with small modification leading to simplicity in structure, but without altering the basic design.

One has been in use at this Experimental Station, about 25 miles north of London, every night for four years before the war and every night for three years - now just starting its fourth year - since the war. Others have been in use in different parts of Britain, in East Africa, in South Africa and in Belgian Congo.

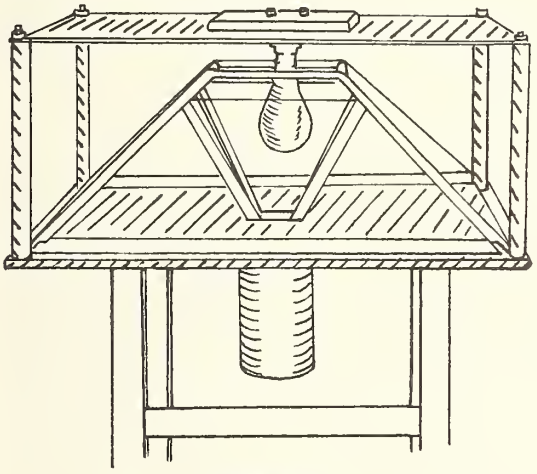

Figure 1

In the one in continuous use at Rothamsted we caught in the first four years about 853,000 insects of which about 740,000 (86.7%) were Diptera; 88,000 (10.3%) Lepidoptera; 14,800 (1.7%) Rhynchota; 6,000 (0.8%) Hymenoptera; 2,000 (0.26%) Coleoptera; 1,250 Psocoptera, 322 Neuroptera, 256 Trichoptera; 274 Thysanoptera and 10 Ephemeroptera. It will be seen that under our local Ecological correction (including very little standing or running water) all but 3% of the catches were Diptera and Lepidoptera.

Among about 15,600 macrolepidoptera which were identified there were included 240 species, which is over one third of the total number of species of these families known to occur in Britain. Since the war the number of species in the single trap, never moved from its original location, has risen to about 275.

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*Ed. Note: When Dr. Williams provided us with a few separates of his recent paper on the Rothamsted Trap, we offered them to Society members. The demand so quickly consumed the available separates that we asked Dr. Williams to provide us with an abbreviated version of the description of his famous trap for the News. The present account was his prompt and gracious response. C.L.R.

So the trap has been well tested and has been found to be satisfactory, but of course is not beyond further improvement.

The general principle is that a bright light - (electric acetylene, or gasoline vapour) is surrounded on all four sides by sloping glass plates which lead the flying insect first into an enclosed space round the lamp and then into a killing bottle below the light (see fig. 1).

Once the basic plan has been grasped, the details can be varied to suit local conditions. If electricity is available it is a simple matter to construct a trap round an electric bulb of the desired size and with a suitable sized killing bottle. We have had traps with a 1000 watt bulb, but most of the work has been done with lights of 200 watts.

The trap with the 200 watt bulb is approximately 22 inches square and 10 inches from the base to the roof. The sizes of the glasses used to make them are shown in figure 2. The glasses have been fixed in various ways; metal frames, adhesive tape, or wooden triangles may be placed diagonally at each corner to support the inner and outer glasses. Ordinary adhesive tape will last a week or two, and if varnished, will survive several months.

All parts of the trap should be blackened and no light should escape through the killing bottle below.

For the killing bottle we use 2 lb. fruit bottling jars, but bigger or smaller could be adapted. The largest moths we get here are Sphingidae up to about 4 1/2 inches across the wing, but of course if one was expecting many Erebus odora a small barrel might be more suitable.

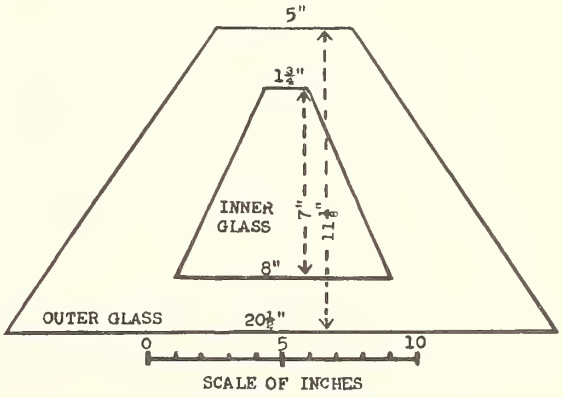

Figure 2

For killing agent we have used sodium cyanide, calcium cyanide, carbon tetrachloride, and tetrachlorethane. The latter is very satisfactory but requires care in using as inhaling continuously small doses may be injurious to health. If the killing bottle is

in good condition 99% of the Lepidoptera should be in a fit condition to identify. The main trouble is with large beetles which are difficult to kill and which in walking round may damage the other insects in the killing bottle, especially the Lepidoptera.

I hope this year to experiment with "dry ice" (solid CO_2) as a killing agent. I think even large beetles should stop crawling at temperatures below zero.

A friend of mine has no killing bottle to his trap, but a large box with the inside painted white. The moths settle on the sides of the box and are examined (with certain obvious precautions) the next day. In this way only the desired specimens are killed and the other liberated.

Full details and photographs of various forms of the trap have been published in the Bull. Ent. Res., vol.15 (1924): p.57; in the Trans. R. Ent. Soc. London, vol.83 (1935): p.523; and in the Proc. R. Ent. Soc. London (A), vol.23 (1948): p.80. A record of the total number of insects caught each night for four years will be found in the Proc. R. Ent. Soc. London, vol.15 (1940): p.78.

One of our traps was fitted with eight killing bottles on a turn table, and by means of a clock each was exposed for one eighth of the period from 1/2 hour after sunset to 1/2 hour before sunrise. From this it was possible to say at which period of the night different species entered the trap. Details of this trap and some results will be found in the Trans.R.Ent.Soc.London, vol.83 (1935): p.523.

PALEARCTIC LEPIDOPTERA GENITALIA AND OVA TO BE FIGURED

The able editor of Lambillionea, M. Lucien Berger of Brussels, recently announced a new plan whereby that periodical will publish a very long series of photomicrographs of the genitalia of the Palearctic Lepidoptera. They will not be present in a tight systematic sequence but rather will appear according to the groups completed by their respective authors. The first 9 species figured, the first section of Geometridae appear in Nos. 3-4 of Volume 49 of Lambillionea and the first preparator is F. Richard, remembered by Lep. News readers as the author of the article we translated in part on getting ♀ butterflies to oviposit in captivity (Lep. News, vol.2: p.74; 1948).

A second valuable series which commenced in the next issue of Lambillionea (Nos.5-6) is devoted to illustrating the ova of Lepidoptera. The author, L. Sarlet, presents excellent drawings of ova of 9 Nymphalidae (Argynninae) and 7 Satyridae.

Our hearty congratulations to the editors of Lambillionea for their decision that the time has come "no longer to figure only minor forms" of Lepidoptera. Lepidopterists in all parts of the world will find these two series of value for comparisons.

C.L. Remington

FIELD NOTES

PAPILIO PUPA EMERGING AFTER TWO WINTERS.- In the fall of 1947 I received in trade with Prof. Macy, Reed College, Oregon, several chrysalids of Papilio zelicaon. Three did not hatch so I just left them in a jar, and this spring (1949) I watered them and chrysalids of P. troilus and placed over a stove pilot light to force early hatching. One TWO-YEAR OLD P. zelicaon hatched on Feb. 24th to our amazement! The other 2 chrysalids still look as though they are alive.

Vonta P. Hynes
Battle Creek, Mich.

LIZARD CATCHES UNDERWING MOTH.- Early in May I caught a flash of a moving red object under a shrub in my garden. This proved to be a Catocala ultronia in the mouth of a lizard. On being disturbed the lizard dropped the moth. When mounted the insect was almost a perfect specimen.

W.M. Davidson
Orlando, Fla.

PERSONALIA

PROF. W.T.M. FORBES has been visiting various institutions studying material for the next section of The Lepidoptera of New York and Neighboring States. He spent several days at the Museum of Comparative Zoology at Harvard College and later planned a month at the Canadian National Collection at Ottawa. The third part, on the Noctuidae (=Phalaenidae) will probably go to the printer next summer (1950) and will be issued about a year later.

M. S.G. KIRIAKOFF has been made an associate of the Belgian National Fund for Scientific Research and as a consequence will be enabled to pursue on a larger scale his investigations of the tympanic organs of Lepidoptera.

We learned with regret of the passing on March 20th, 1949, of DR. EUGENE E. GLOOR, of Watsonville, California, a Sustaining Member of the Lepidopterists' Society. He was a physician who had a large general collection of Lepidoptera and was known for his interest in helping children with entomological hobbies.

J. DONALD EFF, active Colorado collector, has had a number of visiting lepidopterists at Boulder this year, including MAJOR S.S. NICOLAY of Pensacola, Florida, A.H. MOECK of Milwaukee, Wisconsin, RAY ROMINE of Marion, Ohio, and P.S., C.L., and JEANNE E. REMINGTON of St. Louis, Missouri, and New Haven, Connecticut. He joined the Remingtons in a return trip to the now-famous Rabbit Ears Pass in search of more Speyeria egleis secreta. Eff, F. MARTIN BROWN, and REV. B. ROTGER are planning a revised check-list of the butterflies of Colorado.

MRS. MARGARET M. CARY of Philadelphia, Pennsylvania, and J.W. CADBURY of Pemberton, New Jersey, have returned from a highly successful trip to Venezuela for the purpose of studying Sphingidae. They met PROF. RENÉ LICHY at Caracas, but academic duties prevented him from joining them in the field.

A LIST SUPPLEMENTING BATES' "BUTTERFLIES OF CUBA"*

by Salvador Luis de la Torre y Callejas
Matanzas, Cuba

1. Papilio (Pterourus) troilus ilioneus J.E. Smith.
   Collected in Cojimar, Havana Province (May 30, 1931).
2. Papilio (Heraclides) andraemon hernandezi Torre.
   Captured in Ampliación de Almendares, Havana, in Matanzas, and other localities, and described as a new subspecies by Dr. Ricardo de la Torre in December, 1936.
3. Ascia monuste monuste (Linné).
   This name was placed by Bates as a synonym of Pieris phileta phileta (=Ascia monuste eubotea) which has been collected by us in Bellamar beach, Matanzas Province (in May, 1944, and in October and November, 1947).
4. Ascia monuste phileta (Fabricius).
   This name also was placed by Bates as a synonym of Pieris phileta phileta (=Ascia monuste eubotea). It is this subspecies that appears more frequently in Florida, and which I have collected in Bellamar beach, Matanzas, (November, 1947) and in Versalles, Matanzas, (July, 1940).
5. Eurema (Pyrisitia) dina citrina (Poey).
   The names citrina and larae were placed by Bates as synonyms of dina dina. Afterwards he considered larae as a distinct species; but we consider larae as a synonym of citrina, which is possibly a seasonal form of dina.
6. Eurema (Eurema) daira gibriola (Poey).
   This is the winter form of daira, which was placed by Bates as a synonym of palmira (summer form of daira)
7. Eurema (Eurema) elathea cubana (Herrich-Schäffer).
   We think according to observations of Mr. Pastor Alayo that cubana is a seasonal form of elathea, which flies in summer, near the sea. Alayo collected many specimens in Siboney beach, Oriente Province.
8. Danaus (Diogas) plexippus megalippe (Hübner).
   Collected on the San Juan River, Matanzas Province (August and October, 1940).
9. Danaus (Diogas) plexippus portorricensis Clark.
   Collected in the Loma del Gato, and Renté, Oriente Province (summer of 1942; summer of 1947).
10. Danaus (Danaus) gilippus strigosa (H.W. Bates).
    Captured in Versalles, Matanzas Province, and in the Bosque de la Habana (July, 1940).
11. Danaus (Danaus) gilippus gilippina (Hoffmann).
    Collected in Santiago de Cuba, Oriente Province.
12. Danaus (Danaus) eresimus montezuma Talbot.
    Captured near San Cristóbal, Pinar del Rio Province (spring of 1932 and autumn of 1933) and in the Yumurí valley, Matansas Province.
13. Calisto smintheus smintheus Bates.
    Found at elevations between 2750 ft. and 3325 ft. on the Loma del Gato, Oriente Province (1932).
14. Calisto smintheus muripetens Bates.
    Collected in Trinidad Mountains (May, 1932 and May, 1936).
15. Calisto delos Bates.
    Found on the Pico Turquino, Oriente Province (1932 and 1935).
16. Heliconius (Heliconius) charithonius punctatus Hall.
    Collected in Matansas on several occasions.
17. Agraulis vanillae nigrior Michener.
    Captured in Cojimar, Havana Province (Aug., 1945).
18. Euptoieta claudia (Cramer).
    Captured in Bellamar beach, Matansas Province (spring of 1935 and summer of 1947), in Oriente Province, and in other localities of Cuba.
19. Polygonia interrogationis fabricii (Edwards).
    Collected in Bellamar beach, Matansas Province (summer of 1941).
20. Hamadryas amphinome mexicana (Lucas).
    Taken in Rangel, Pinar del Rio Province (Aug., 1934).
21. Hamadryas feronia diasia (Fruhstorfer).
    Collected in Santiago de Cuba, Oriente Province (December, 1946).
22. Limenitis archippus floridensis (Strecker).
    Collected in the Cotorro, Havana Province (August 7, 1933).
23. Libytheana bachmanii bachmanii (Kirtland).
    Collected in Marianao, Havana Province (summer, 1933) and Cojimar, Havana Province (Oct., 1934).
24. Theola limenia Hewitson.
    This name was placed by Bates as a synonym of Strymon columella (=Theola columella), but Comstock & Huntington have demonstrated that both are distinct species. We have several specimens collected in Oriente.
25. Choranthus radians ammonia (Plötz).
    Captured in Rancho Mundito, Pinar del Rio Province (July, 1947), in Santiago de las Vegas, Havana Province (May, 1947), and in Bellamar beach, Matanzas Province (Sept., 1947).

SOME SPECIES COLLECTED OR OBSERVED IN CUBA THAT WERE CITED BY BATES AS DOUBTFUL:

26. Pieris protodice protodice Boisduval & Leconte.
    Collected in the Almendares river, Havana Province (spring of 1933), and in the Cotorro, Havana Province (summer of 1933).
27. Atrytone singularis singularis (Herrich-Schäffer).
    Collected in abundance in Siboney, Oriente Province (July, 1943 and Aug., 1944).
28. Philaethria dido (Clerck).
    Observed by Dr. Ricardo de la Torre in Havana Province.

*Bates, Marston, "The Butterflies of Cuba", Bull. Mus. Comp. Zool., vol.78: pp.63-258; February, 1935.

An important notice concerning the recovery in Kansas in 1948 of a marked specimen of Anaea andria, the Goatweed Butterfly, appeared in the November, 1948, issue of the Lep. News. We have received no response thus far as to the individual and place of marking. This is a very important record and we are eager to discover the origin of the specimen. It was marked by removing scales to leave numbers and letters clearly visible. Anyone who can help discover the marker will merit the warm gratitude of all migration students. The marked Anaea is now in the hands of the Lep. News editor.

REVIEW OF VOLUME I OF HAYWARD'S RHOPALOCERA OF ARGENTINA*

The long-awaited publication of this first in a series of eight planned volumes on Argentine butterflies is even more elegant than expected. Few, if any, of the dozens of large and exquisite books on Lepidoptera surpass the beauty of Professor Hayward's first volume. The book looks more like the finest works of the Eighteenth Century than the crowded, imperfectly colored volumes to which we are accustomed today. The size of the pages is about 10" x 14". The text pages have broad margins, comfortably large type, and a wide assortment of type forms to make it easy to move quickly from page to page to find any one kind of information. The first twelve plates have clear, crisp line drawings, and the last fifteen are plates in full color of startling perfection, unlike some of the plates in recent works by Seitz, Holland, and others. The Hayward figures are well spaced, so that a crowded appearance is avoided and yet space is not wasted. The paper is heavy and of excellent quality. The cloth binding appears to be tough and long-lasting.

These aspects of materials and workmanship, while not related to an evaluation of the science in the book, will be important to anyone contemplating the large outlay of funds required to purchase it.

The scientific excellence of the volume appears fully as great as its technical excellence. This "Tomus Primus" covers the subfamilies Pyrrhopyginae and Pyrginae of the family Hesperiidae, but it also introduces the Lepidoptera, with brief accounts of the morphology and metamorphoses and keys to the suborders and divisions, the superfamilies of Rhopalocera, the families of Hesperioidea (Hayward accepts as full families the Euschemonidae, Megathymidae, and Hesperiidae), and the subfamilies of Hesperiidae (Pyrrhopyginae, Ismeninae, Pyrginae, Hesperiinae) of the world. Hayward treats 11 genera and 28 species of Pyrrhopyginae (11 are in Pyrrhopyge) and 51 genera and 167 species of Pyrginae. Apparently all the species are figured, 166 both by ♂ genitalia and in color, 8 only by the ♂ genitalia, and 22 only by adults in color.

Professor Hayward gives keys to the Argentinian genera, based on the males, and wherever there are two or more Argentinian forms in a genus, there is also a key to the forms. For each genus and species and higher category there is a detailed bibliographic synonymy. The original descriptions of all categories are reproduced in the original language. Then follow a redescription in Spanish, notes on the geographic distribution with specific Argentinian localities, and host plants and biological information if known. A particularly pleasing feature is the etymological derivation of nearly every generic and specific name.

The plates are followed by a bibliography and five useful indices, to: main sections; genera and higher categories; species and lower categories; host plants; and species figured.

Only two criticisms occur to the reviewer in examining this wholly satisfying blend of art and science. First, the explanations of figures on the plates are very difficult to read when the user is looking up a particular figure; it seems probable that clear printing of these names would not detract from the beauty of the plate make-up. Second, there is surprisingly little information on the biology of the species; possibly time has not permitted much attention to life histories, host plants, ecological relationships, and so on, but this volume certainly compares unfavorably with nearly all other butterfly books in this one respect.

C.L. Remington

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* Lep. Soc members who wish to purchase this expensive and beautiful volume may order through the Lep. News office and will thereby permit Argentinian entomologists to purchase needed literature in the U.S.A. in spite of the soft currency barrier. Exchange rates are still being arranged; so an exact price in dollars is not yet known as this issues goes to press.

RESEARCH REQUESTS

MIGRATING MONARCHS

Dr. P.H.H. Gray, of Macdonald College, Quebec, Canada, is marking Danaus plexippus for the autumn southward flight by means of holes punched in the wings. Other marking experiments are also being tried, and North American collectors are urged to watch all Monarchs for indications of markings. Any recoveries can be reported to the Lep. News editor and will be traced as quickly as possible.

SPHINX CANADENSIS & EUPHYDRYAS LARVAE

Information needed on Sphinx (= Hyloicus) canadensis Bdv. All Lep. News readers having specimens please send complete information from data labels (a post card will do). All records will be published and collectors acknowledged.

Occupied webs of hibernating larvae of Western North American Euphydryas sought for hybridization studies. Will exchange webs full of E. phaeton larvae if desired.

C.L. Remington, Osborn Zoological Laboratory, Yale University, New Haven 11, Conn.

ERRATUM: In the Phylogenetic Chart of the Orders of Insects (Lep. News, vol.3: 47) the Order Psocoptera was inadvertently omitted. It was included in the explanatory text (p.45) as the tenth order. PSOCOPTERA should be inserted in the chart at the end of a long branch originating near the base of the Thysanoptera branch.

C.L.R.

PLEASE NOTIFY THE NEWS EDITORS
OF CHANGES OF ADDRESS PROMPTLY

LETTERS TO THE EDITOR

Department of Entomology
British Museum (Natural History)
Cromwell Road, London S.W. 7
23rd. June 1949

The Editor
The Lepidopterists' News

Sir,

As one of the "alternates" who attended every meeting of the International Commission on Zoological Nomenclature held during the Zoological Congress in Paris last July, may I congratulate you on publishing the very welcome letter from Mr. dos Passos which appeared in your February issue. I have been greatly disturbed by the adverse criticisms and more particularly by the rumours of such criticism current in entomological circles, concerning the conduct of those meetings and therefore the forthright endorsement of the manner in which the Paris proceedings were conducted, by a man of such wide experience of the conduct of affairs in that larger world outside our special interests, is very valuable.

It is I think true to say that all of us who attended those meetings, commissioners, alternates, or plain members of the Congress, were imbued with an intense desire to 'get on', to show zoologists that the Commission was by no means dead (I seem to remember a wartime movement to supplant it), to wipe off clogging arrears, to put its own house in order and if possible to do something about bringing the Rules up-to-date. How was all this to be done in a week? It was no surprise to me that not a dissentient voice was raised when the Secretary proposed, following the precedent of 1935, that we should suspend the Commission's Bye laws for the duration of the meeting. That done the path was clear; we realised that there might well be pitfalls in this path, that we might well make mistakes. However, as a properly constituted and responsible body (not, Mr. Editor, "a small, unrepresentative and... insufficiently informed group of individuals") having the full power and authority of the Commission, it was our duty to take these risks. We proceeded, with digressions now and then, on the principle of agreeing unanimously everything we could, most of us readily compromising upon minor issues in order to achieve major results, withdrawing items upon which it became quickly apparent either that the information available was not complete or that such a conflict of opinion obtained that little hope of quick agreement existed. As just one example of the action taken on a matter of some importance I will refer to the conflict between the proponents of strict priority and their opponents who favoured a far greater use of suspension of the rules than is at present employed. Very strong feeling existed, in Washington at least, in favour of the strictest priority but, although in my view equally strong and much more broadly based expression was given to the opposite view by Scandinavian and British Zoologists present at Paris, some of whom would even advocate an almost arbitrary fixation of names throughout whole Orders, by suspension of the Rules, it was decided to refer the matter back for further consideration. Had a vote been taken, the advocates of the strictest priority would certainly have been defeated.

In your editorial comments, Mr. Editor, I am very glad to read your reference to the "especially strong agitation to amend the Rules, adjust the conflicts which had arisen from contradictory Opinions and incorporate rules for the omitted points". You go on to state, quite correctly that "Dr. Sabrosky has been one of the leaders in this endeavor". Now it seems to me very odd that, if this is all true, as I certainly believe it to be, the very criticism being levelled so insistently against the Paris commission is that they actually had the temerity to do those very things! Temerity is indeed the right word, for whoever will attempt to "re write" the Rules knows full well that he can never satisfy everybody, that always there will be a bee in somebody's bonnet that can't be stilled. However, the Commission having taken its decision was confronted with the question of how to give effect to it. Four days remained. Could the Commission literally rewrite the Rules in four days? Impossible. After 50 years of argument the Rules are still not right. The only practical thing was to decide in principle what was to be done and to arrange for somebody to do it. This we did; and our action, having been accepted by Congress, cannot be set aside except by the next Congress.

The position now is that nothing further can be done until the new edition of the Rules has been published; and it is a sheer waste of time and energy to argue about what has been or might have been done or not done until this takes place. Neither the Commission nor Congress itself can clothe the rules with the authority of the law, so arguments about legality are irrelevant; only their acceptance by zoologists can give them any semblance of authority, and only their use by zoologists can lead to their final adoption, for I cannot believe that any body of scientific men would consent to be bound by rules which are repugnant to them. Let us therefore await these Rules with patience and forbearance; the more we argue about the Paris meeting the longer shall we have to wait for the results of that meeting. I am content to be judged on those results.

Yours sincerely,

N.D. Riley

Laboratoire voor Zoologie
Universiteit te Gent
Gent, Belgium

Editor
The Lepidopterists' News

Dear Sir:

Since you have honored my paper "A Classification of the Lepidoptera and related groups" with a review in the Lep. News 3: p.50, I hope you will allow me to make a few remarks regarding one or two points in your criticism.

Kiriakoff: LETTER- cont.

First, I cannot see why giving names to NEW CATEGORIES must be considered as a "deplorable nomenclatural procedure". If you have in view the names labelled in your review as "nov.", the use of new names in those cases was unavoidable, since, as far as I am aware, the supercohortal category has never been used. Should I have given new names to existing categories (i.e. those used in recent classifications: suborders, families &c.) or even to new groupings bearing a rank equivalent to that of one of those categories,- I certainly would have been guilty of using a deplorable procedure. This, however, is not the case when a hitherto unused category comes into the play. I certainly agree with your general views on the question; but I think they do not apply in the present case.

Secondly, I cannot agree that any "superorder" containing Mecoptera must include also the Diptera. The latter certainly are near relatives of the former; but, in my opinion, Lepidoptera and Trichoptera are still closer related to the Mecoptera. Accordingly, I unite these three groups as a superorder, the latter being the next "upper" category. My paper only dealt with the Lepidoptera-group; so I put their more distant relatives aside; but, should I have had in view a more general classification, I would have arranged all the above groups in a single taxonomic unit above the superorder, comprising two superorders, one with the Mecoptera, Trichoptera and Lepidoptera, the other with the Diptera and Siphonaptera, although the latter are sometimes put apart and form a superorder of their own.

Thirdly, the fact that the Caddis-flies and the Lepidoptera have been for so long considered orders, should not prevent one from trying to establish more exactly their respective taxonomic values. I, for one, think that the characters differentiating them are of subordinal value. There are other instances when considerations of long standing on the taxonomic value of a group have been modified. Let me take a significant example. In the same issue of the NEWS (45-47), you have given a review of insect-orders; the 8th order is that of the Orthoptera, including Grasshoppers, Grylloblattids, Roaches, Praying Mantids, Walking Sticks &c. In Martynov's classification (in Trav. Inst. Paléont. Ac. Sci. U.R.S.S., 7/4, 1938), used (with a few modifications) by Jeannel in the new "Traité de Zoologie", T.ix, 1949, Roaches and Mantids form the order Dictyoptera of the superorder Blattopteroidea; Grasshoppers (order Orthoptera), Grylloblattids (order Notoptera), Walking Sticks (order Cheleutoptera) and the Embiids (order Embioptera) the superorder Orthopteroidea. I have gone into some detail to show that my arrangement does not differ from the classical one much more than Martynov's one does.

I must emphasize that I have tried to exteriorize in my arrangement the gradations of differentiating characters between the various groups, and to assign each of the latter a position in accordance with the importance of the said characters.

Very sincerely yours,

(signed) S.G. Kiriakoff

ATLAS DES LÉPIDOPTÈRES DE FRANCE- III

The third and final part of the "Atlas des Lépidoptères de France, Belgique, Suisse" has now appeared. (See review of the second part in Lep. News, vol.2: p.88; 1948.) This third fascicle, like the second, is by Claude Herbulot. It includes the families Geometridae, Lasiocampidae, Zygaenidae, Pyralidae, Pterophoridae, Tortricidae, Orneodidae, Aegeriidae, Tineidae, Incurvariidae, Tischeriidae, Stigmellidae (=Nepticulidae), Hepiolidae, Eriocraniidae, and Micropterygidae. These are extremely broad families, made very inclusive to simplify the Atlas. Herbulot makes it clear that his "Tineidae", for example, may actually be divided into as many as twenty families for France, alone.

The text includes about 400 species, of which only 121 are in the "Microlepidoptera". This exaggerated treatment of Geometridae, Lasiocampidae, and Zygaenidae (with 22 of the 35 French zygaenids!) is justified by the author in three ways: 1) the book is intended primarily to aid amateurs, who usually are most concerned with the "Macros"; 2) the proportion of species included in Fascicle II for each family was maintained for the three families of Macros left for Fascicle III; 3) the Micros are relatively rarely taken and must be reared to develop a worthwhile collection. However, it is disappointing to find that some families which are very popular with amateur moth collectors are not given more extensive attention. Only 4 of the 37 Aegeriidae in France are mentioned, and only 3 of the 82 Pterophoridae!

There are twelve colored plates and their figures are superb - remarkably so for an inexpensive work. The eleven plates of adult moths by R. Préchac, a talented illustrator, contain 167 species of Geometridae, 15 Lasiocampidae, 16 spectacular Zygaenidae, and 112 species of Micros. The locality and date of each specimen figured are precisely noted. The last plate shows 26 larvae. The colored illustrations alone are well worth the price of the book. Aside from these plates there are text figures of venation and a full page showing the eighth ventral abdominal plate of males of 25 species of Eupithecia. Herbulot thus makes available to the French amateurs a rather easily used diagnostic genitalic character usually regarded as the tool only of the specialist.

In the text are given for each species: the distribution in France, Belgium, and Switzerland; the flight period; and the larval food and season. For the few species not figured there are brief descriptions. Each family is simply characterized and keys to subfamilies are included. For every family there is a note of the number of species in the world and the number of species and genera in France.

Now that the "Atlas des Lépidoptères" has been completed, Lep. News readers may wish to obtain the set. Each fascicle is available for 480 French francs from: N. Boubée & Cie., 3, place St-André-des-Arts, Paris (VI?), FRANCE. The fascicles are as follows:

Fasc.I (1944) RHOPALOCÈRES, by F. LeCerf.
Fasc.II (1948) and III (1949) HÉTÉROCÈRES, by C. Herbulot.

C.L. Remington

RECENT LITERATURE ON LEPIDOPTERA

155. Berger, L.-A., "Un nouveau Cosymbia." Lambillionea, vol.49: pp.33-34, 1 fig. Apr. 1949. Describes as new Geometrid C. delaeveri (Membre, Belgium) differing from C. ruficiliaria only in ♂ genitalia,which are figured. Location of type not given. (C.R.)

156. Beuret, Henry, "Lycaenidologische Notizen (Lep.) (Ein Beitrag zum Problem der Nomina nuda)." Mitt. Münchner Ent. Gesell., vol.34: pp.363-386. 1944 [1 Dec. 1948]. Places definitely several infra-specific names of European Blues and Coppers. Extensive bibliography. (C.R.)

157. Blackwelder, R.E., "Bibliographia". Coleop. Bull., vol.3: pp.25-29. 22 Apr. 1949. A valuable extensive list of important sources of bibliographic information on insects, with emphasis on Coleoptera. (C.R.)

158. Bourgogne, Jean, "Les transformations subies par le fourreau de certains Psychidae pendant la croissance de la chenille (Lep.)." (In French.) Bull. Soc. Ent. France, 1948: pp.130-133, 7 figs. Detailed account of processes of covering cases by "bagworms"- Fumea casta and F. crassiorella. (C.R.)

159. Bourgogne, Jean, "Les Parnassius des montagnes francaises." (In French.) Entomologiste, vol.5: pp. 5-10, 4 figs. Feb. 1949. Semi-popular account, with figures, of P. apollo, P. phoebus, P. mnemosyne in France. (C.R.)

160. Bourgogne, Jean, "Observations sur l'instinct des chenilles de Psychidae (Lep.)." (In French.) Bull. Soc. Ent. France, 1949: pp.49-52. Apr. 1949. Report on experiments with "bagworms", Fumea casta, F. crassiorella, and Acanthopsyche atra, showing that the instinctive habit pattern in constructing cases are fairly rigid but are flexible in certain aspects of selection of materials. (C.R.)

161. Chermock, Ralph L., "Two new satyrids from North America." Can. Ent., vol.80: pp.172-173. "1948" [1949]. Describes Minois meadi mexicana from Chihuahua, Mexico, types in the Carnegie Museum, and sinks M. m. melania Wind as a synonym of M. m. meadi (Edwards); also describes Euptychia rubricata chenevorum from Madera Canyon, Santa Rita Mountains, Pima Co., Ariz., and other localities in that state, location of types not stated, and sinks E. r. smithorum Wind as a synonym of E. r. rubricata (Edwards). (C.dP.)

162. De Laever, E., "Trachea furva Schiff." Lambillionea, vol.49: pp.43-44. June 1949. Verifies occurrence in Belgium. (C.R.)

163. Emmet, A.M., "More Butterflies of the Arakan Coast" Journ. Bombay Nat. Hist. Soc., vol.48: pp.62-74. Dec. 1948. Supplements earlier list by Gladman (same journal, vol.46). Records 111 more spp. and gives more notes on 29 from Gladman's list. Total in both lists: 270 spp. (72 Lycaenidae, 59 Hesperiidae, 48 Nymphalidae, etc.)! (C.R.)

164. Evans, W.H., "Some New Hesperiidae (Lepidoptera) from Africa." Ann. & Mag. Nat. Hist., vol.2(ser.12), no.13: pp.54-56, pl.IV. 26 Apr. 1949. Describes as new: Celaenorrhinus kimboza (Uluguru Mts., Tanganyika); Sarangesa gaerdesi (Abenab, S.W. Africa); Gorgyra kalinzu (Kalinzu, Uganda); Pelopidas fanta ssp. barnesi (Vumba, S. Rhodesia). Brief descriptions, only fair photos of types, sketches of ♂ genitalia, but no figure of barnesi. Types in Brit. Mus. (C.R.)

165. Evans, William H., "The Mystery of the Black Powder." Nature Mag., vol.41: pp.97-98, 1 photo. Feb. 1948. Careful account of emergence of Hemaris senta ("Clearwing Sphinx Moth") full scaled and of loss of most scales with first flutter. Some other biological notes. Good photo of scaled and unscaled adults and pupa case. (C.R.)

166. Fales, John H., "Monarch Butterfly Migrating in Botetourt County, Virginia." Ent. News, vol.60: p.68. Mar. 1949. Records flight on 28 Sept. 1941, near Roanoke, Va., with 7 per minute crossing road. (C.R.)

167. Fleming, Henry, "The Pericopidae (Moths) of Kartabo, British Guiana, and Caripito, Venezuela." Zoologica (N.Y.), vol.34: pp.19-20. 16 May 1949. Describes as new: Pericopis catilina angustilineata (Caripito). Also records 10 other spp. Sinks Dyscheema brotes as synonym of Pericopis c. catilina. (C.R.)

168. Forster, Walter, "Beiträge zur Kenntnis der ostasiatischen Ypthima-Arten (Lep.Satyrid.)." Mitt. Münchner Ent. Gesell., vol.34: pp.472-492, pls.30-33. 1944 [1 Dec. 1948]. Describes as new from China: Ypthima melli (Likiang, N. Yunnan); Y. pseudodromon (Likiang, N. Yunnan); Y. methora ssp. microphthalma (Likiang, N. Yunnan); Y. sakra ssp. leechi (Kunkalashan, Szechwan); Y. conjuncta ssp. luxurians (Kuatun, Fukien); Y. sordida ssp. tsinlingi (Tsinlingshan, S. Shensi); Y. zodia sspp. tapaishani (Tsinlingshan, S. Shensi) and septentrionalis (Mienshan, Shensi). Type of leechi in Munich State Collection; all others in König Museum, Bonn. Notes on other Chinese Ypthima. Fine photos of upper and under sides of all new forms and Y. avanta, Y. zodia & ssp. albescens, Y. argus ssp. hyampeia, Y. newara ssp. sarcaposa, Y. sordida, Y. lycus, Y. obscura, Y. ciris, Y. dromon, Y. phania. (C.R.)

169. Frings, Hubert & Mable Frings, "The Loci of Contact Chemoreceptors in Insects. A Review With New Evidence." Amer. Midland Nat., vol.41: pp.602-658, 9 figs. May 1949. Reviews evidence of sense of taste in insects. Report new experiments on 23 spp. of insects, including Pieris rapae and Colias philodice adults, and Danaus plexippus larvae and adults. Distinct taste organs found on middle tarsi and proboscis of adults of all 3 spp., on fore tarsi of P. rapae and C. philodice, and on tips of labium and max. palpi of D. plexippus larvae. Tarsal and proboscal sensilla of P. rapae and D. plexippus described and figured. Extensive bibliography. (C.R.)

170. Garth, John S., "Studies in Arizona Lepidoptera. I. A new subspecies of Speyeria atlantis (Edwards) from the Kaibab Plateau, Grand Canyon National Park." Bull. So. Calif. Acad. Sci., vol.48: pp.1-4, pl.1. 20 June 1949. Describes as new S. atlantis ssp. schellbachi (Grand Canyon, Coconino Co., Ariz.), with fine photos of both sexes. Types in coll. Allan Hancock Foundation, Univ. S. Calif. (C.R.)

171. Hatch, Melville H., "The 'Compleat' Taxonomist." Coleop. Bull., vol.2: pp.71-72. Oct. 1948. A brief outline of some considerations important to the modern taxonomist. (C.R.)

172. Hayward, Kenneth John, "Insecta, Lepidoptera (Rhopalocera), familia Hesperiidarum, subfamiliae Pyrrhopyginarum et Pyrginarum." (In Spanish), tomus I of Genera et Species Animalium Argentinorum; 389 pp.,12 pls.uncol.,15 pls.col.; Buenos Aires; Fundacion Miguel Lillo; 1948. See review on page 66, above. (C.R.)

173. Hemming, Francis, "Important Advances in Zoological Nomenclature Achieved at the Thirteenth International Congress of Zoology." Coleop. Bull., vol.2: pp.52-55. "June" 1948. An outline by Secretary Hemming of actions taken by the much discussed 1948 meeting of the Int. Commission on Zoological Nomenclature. (C.R.)

174. Holik, Otto, "Beiträge zur Kenntnis der Zygaenen Südosteuropas. (Lep.)." Mitt. Münchner Ent. Gesell., vol.34:pp.387-417. 1944 1 Dec.1948 . Distributional records on Zygaena angelicae, Z. transalpina, ephialtes (with new races tymphrestica from Velunchi, Greece, and retyesati from Retyesat Mts., Transsylvania. (C.R.)

175. Jaynes, H.A. & C.F. Speers, "Biological and Ecological Studies of the Spruce Budworm." Journ. Econ. Ent.,vol.42: pp.221-225. Apr. 1949. "Preliminary report" on life history of "Archips" fumiferana. (C.R.)

176. Kiriakoff, S.G., "Over de Phylogenie van de Thyretidae fam.nov. (Lepidoptera)." (In Dutch.) Natuurwet. Tijdschr., vol.30: pp.3-10, 1 pl., 1 fig. 30 Mar. 1949. Erects new family THYRETIDAE for African former Ctenuchidae on basis of tympanal organs of the "type à tymbale". Maintains tympanal organs require split of old Superfamily "Noctuoidea" into NOTODONTOIDEA (former "Trifids" and Thyretidae) and PHALAENOIDEA (former "Quadrifids"). Disagrees with Richards (1932) view that Doa is annectant between the two groups. Gives drawings of tympanal organs of Ctenuchidae, Thyretidae, Notodontidae. It is regrettable that the erection of a new family is in a paper in the Flemish language rather than in one more widespread. (C.R.)

177. Knaben, Nils, "Eupithecia fennoscandica n.sp. (Lepid., Geometridae)." (In English.) Ent. Tidskr., vol.70: pp.77-81, 2 figs., pl.1. 5 May 1949. Describes as new E. fennoscandica (Saana, Finland). Related to E. undata of Alps. Figures ♂ & ♀ genitalia of fennoscandica and undata; photos of adults of both. (C.R.)

178. Laird, M., "A Migration of Papilio brownì (Lepidoptera) observed at Jacquinot Bay, New Britain." Proc. R. Ent. Soc. Lond. (A), vol.24: pp.32-34, 1 fig. 15 Mar. 1949.

179. de Lesse, H., "Recherches en dehors des chemins battus. Contribution à l'étude des Rhopalocères du département de la Drôme." (In French.) Lambillionea, vol.48: pp.59-64; vol.49: pp.8-14; 24-30. Aug. 1948, Feb., Apr. 1949. Annotated check-list of butterflies of Drôme Prov. and vicinity. (C.R.)

180. Munroe, Eugene G., "An Unnoticed Character in the Saturnioidea (Lepidoptera)." Ent. News, vol.60: pp. 60-65. Mar. 1949. Discusses valuable characters in subventral series of spines in larval saturnioids. Gives chart of spines on 9 Citheroniidae, 11 Hemileucinae, 3 Ludiinae, 13 Bunaeinae, 18 Saturniinae. Suggests Bunaeinae very primitive; Citheroniinae primitive and near Hemileucinae, Ludiinae perhaps near Saturniinae. (C.R.)

181. Nordström, Frithiof, "Två för landet nya Eupithecia-arter." (In Swedish.) Ent. Tidskr., vol.70: p. 113. 5 May 1949. Brief note. (C.R.)

182. Pence, Roy J., "A Photomicrographic Study of the Wings of Lepidoptera." Turtox News, vol.27: pp.141-142, 4 figs. June 1949. Brief discussion, with fine photomicrographs of scales of Danaus plexippus, of wing scales. (C.R.)

183. Richard, F., "La première planche de Genitalia." Lambillionea, vol.49: pp.39-40, pl.1. Apr. 1949. The first of what will be a series of plates giving photos of genitalia of Palearctic Lepidoptera. Figures 2 Brephinae, 5 Oenochrominae, 2 Hemitheinae (Geometridae). (C.R.)

184. Richard, F., "Eupithecia scopariata Rbr. Espèce à rayer de la faune belge." Lambillionea, vol.49: pp. 42-43. June 1949. E. "scopariata" recorded from Belgium only in 1859 dissected and proves actually to be E. dodoneata. (C.R.)

185. Rindge, Frederick H., "Observations on the Life History of Chlorosea banksaria Sperry (Lepidoptera: Geometridae)." Pan-Pacific Ent., vol.25: pp.24-26. Jan. 1949. Very detailed descriptions of last 2 larval instars and pupa. Host- Ceanothus thyrsiflorus. (C.R.)

186. Sarlet, L., "Les premières planches d'oeufs de Lépidoptères." Lambillionea, vol.49: pp.59-60, pls. 2-3. June 1949. Good detailed drawings of ova of "Brenthis" aphirape, B. selene, B. euphrosyne, B. arsilache, B. dia, Argynnis lathonia, Arg. aglaja, Arg. cydippe, Arg. niobe, Agapetes galathea, Pararge egeria, P. megera, Aphantopus hyperantus, Maniola jurtina, Coenonympha iphis, C. pamphilus. (C.R.)

187. Sevastopoulo, D.G., "Some Suggestions for Entomological Work in India." Journ. Bombay Nat. Hist. Soc., vol.48: pp.75-92. Dec. 1948. Fine analysis of problems needing study, primarily with butterflies. (C.R.)

188. Sperry, John L., "Southwestern Geometrid Notes and new Species." Bull. So. Calif. Acad. Sci., vol.48: pp.7-12. 20 June 1949. Describes as new in great detail: Semiothisa fieldi "var." comstocki (Independence, Calif.); Nepterotaea dorotheata (Sta.Rita Mts., Ariz.); Azelina waltonaria (Chiricahua Mts., Ariz.,). No figures; genitalia not mentioned. Types of comstocki and dorotheata in Los Angeles Co. Mus.; type of altonaria in Sperry Coll. (C.R.)

189. Steinhaus, Edward A. & Clarence G. Thompson, "Preliminary Field Tests Using a Polyhedrosis Virus to Control the Alfalfa Caterpillar." Journ. Econ. Ent., vol.42: pp.301-305, 4 figs. Apr. 1949. Find dissemination of virus disease as spray markedly reduces even small populations of Colias eurytheme. (C.R.)

190. Tilden, J.W., "A Note on Caicella mysie (Dyar) with a Figure of the Male Genitalia." Bull. So. Calif. Acad. Sci., vol.48: pp.4-6, pls.2,3. 20 June 1948. Fine photos of upperside and ♂ genitalia, though latter too reduced, of topotype. Apparently this is first specimen recorded since types. (C.R.)

191. Tilden, J.W., "Notes on Parasites of Certain Microlepidoptera (Gracilariidae)." Pan-Pacific Ent., vol. 25: pp.27-28. Jan. 1949. Lists parasites and host plants of Lithocolletis nemoris, L. agrifoliella, Gracilaria reticulata, with some biological notes. (C.R.)

192. Tilden, J.W., "Occurrences of Diurnal Lepidoptera at Light." Pan-Pacific Ent., vol.25: pp.94-96. Apr. 1949. Records at light: Poanes melane, Ochlodes agricola, O. sylvanoides, Vanessa cardui,, V. caryae, Colias eurytheme. (C.R.)

193. Viette, P., "Note sur quelques Eriocraniidae nord-américains." Lambillionea, vol.49: pp.30-32, 3 figs. Apr. 1949. Describes new genus ERIOCRANIELLA (type-aurospersella), shows venation of aurospersella, 2 other genera; gives key to the 5 genera of Eriocraniidae (N. American?). Places griseocapitella in genus Dyseriocrania. Finds Mnemonica luteiceps (Wlk.) of Meyrick is actually a Tineid, not Eriocraniid! (C.R.)

194. Warnecke, G., "Schmetterlinge mit Verbreitungsgrenzen in Schleswig-Holstein und im Niederelbegebiet." (In German.) Mitt. Faunistischen Arbeitsgem., vol.1 (n.s.): pp.55-58, 67-68. June/July, Aug./Sept. 1948. Discusses spread in range of 73 spp. of Lepidoptera in north-central Germany. (C.R.)

195. Warnecke, Georg, "Seltene Schmetterlinge von Elsdorf (Kr. Rendsburg) in der Sammlung Jürgen Mahrt in Elsdorf." (In German.) Mitt. Faunistischen Arbeitsgem., vol.2(n.s.): pp.9-11. 1949. Records 24 unusual spp. of butterflies and moths in Mahrt collection from Elsdorf, Germany. (C.R.)

196. Wellington, W.G., "The light reactions of the spruce budworm, Choristoneura fumiferana Clemens (Lepidoptera Tortricidae)." Can. Ent., vol.80: pp.56-82, 3 figs. "1948" [1949]. Reports part of an elaborate investigation designed to provide data for development of studies of effect of weather and climate upon the spruce budworm, an important pest of coniferous trees, which comprise the pulpwood stands of the forests of northeastern North America. (C.dP.)

NOTICES BY MEMBERS

All members may use this column to advertise their offerings and needs in Lepidoptera. There is no cost for this service. Unless withdrawn sooner by the member, each notice will appear in THREE issues.

For sale or exchange- KANSAS BUTTERFLIES AND MOTHS, esp. Papilionidae, Pieridae, Nymphalidae, Hesperiidae; HETEROCERA: Sphingidae, Saturniidae, Arctiidae, Noctuidae, Catocalinae and Geometridae. Mounted or papered. William Howe, 822 E.11th St.,Ottawa, Kans.

Student entomologists collecting in southern Arizona in August wish to contact persons who will purchase specimens and thus help cover expenses. The material will be named and prepared as desired. Rudolf Mattoni, Div. of Botany, Univ. of Calif., Los Angeles 24, Calif.

Will exchange 800 freshly emerged perfect specimens of EUPHYDRYAS EDITHA TAYLORI for common Papilio and Parnassius in similar condition. Any species or forms acceptable. D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

Butterflies of Florida, Georgia, and the Carolinas for exchange or sale. H.L. King, 2021 Rivermont Ave., Lynchburg, Virginia.

Have few pairs of Argema mittrei from Madagascar for exchange for Papilio specimens, preferably of Africa or Australia. Have also beetles (Buprestidae and Cetonidae from Madagascar) in exchange for tropical butterflies.
A. Glanz, 289 E. 98th St., Brooklyn 12, N.Y.

Calif. Academy of Science drawers, for sale and immediate delivery, 19 by 17 inches O.D. glass topped, composition bottom, clear lacquer finish. This is the new standard. $5.25 ea. $60.00 doz. Bio Metal Associates, P.O. Box 346, Beverly Hills, Calif.

Duplicates for exchange - butterflies from European Alps, Pyrenees, Lapland, Mediterranean, Atlas Mts., N. Africa, Alberta. British moths, also local races British butterflies. Desiderata - many N. American spp., chiefly alpine, arctic, desert & Gulf States. Correspondence welcomed. Colin W. Wyatt, Cobbetts, Farnham, Surrey, ENGLAND.

Wanted: thirty thousand butterflies and moths from all over the world. Small or large lots. Ben Karp, 3148 Foothill Blvd., La Crescenta, Calif.

Wanted to buy: Dyar's "Classification of Lepidopterous Larvae"; Rothschild & Jordan's "A Revision of the Lepidopterous Family Sphingidae" (Nov. Zool, 1903); Scudder's "The Butterflies of New England". Peter Boone, R.F.D. 3, Box #172, Princeton, N.J.

FOR SALE: THE "LIBRA-MOUNT"; a double-Riker-type mount in Book Form. Ruggedly built. Send for descriptive leaflet. Will consider exchange for Macro-Rhopalocera from all parts of the world, especially Papilio, Morpho, Ornithoptera, etc.
Arthur Gatti, 63 W. 7th St., Mt. Vernon, N.Y.

SWISS BUTTERFLIES offered in exchange for species from elsewhere. Dr. A. Lorenz, Kasernenstrasse, Herisau, SWITZERLAND.

Would like to exchange butterflies, large moths, and beetles of the world. Have many duplicates, including several thousand from tropics, with full data. Will be pleased to answer all correspondence. G.F. Schirmer, 2912 N. 45th St., Milwaukee 10, Wis.

For sale: Boloria, Erebia, Oeneis & other Arctic and Far Northern species. Prices nominal. R.J. Fitch, Rivercourse P.O., via Lloydminster, Sask., CANADA.

JAPANESE MOTHS offered in exchange for those of America and other countries,- especially Geometridae, Pyralidae, Sphingidae, and Noctuidae. Prof. Masao Azuma, Kōyō High School, Imazu, Nishinomiya, Hyogo Pref., JAPAN, or 1644, Rinkeiji, Arima, Kobe, JAPAN.

COLLECTION OF BUTTERFLIES & MOTHS for sale reasonably. World-wide in scope, but strongest in U.S.A. (esp. Colo., N.Mex., Ariz.) and European forms; emphasis on Noctuidae, Tortricidae, Nymphalidae, Hesperiidae. Collection spread on pins, and many unidentified papered specimens, all with full data. Collection to be sold as a whole. Sunie E. Wiegand, 2617 W. Sterner St., Philadelphia 32, Pa.

MICROLEPIDOPTERISTS! Wish to exchange: dried leaves containing insect MINES (all orders) accompanied by name of host plant (and of insect, if possible) and locality, etc. Offer European leaf-mines of Lepidoptera (and other orders if wanted). Exchange also in fruit-flies (Trypetidae).
Dr. E.M. Hering, Reichensteiner Weg 21, Berlin-Dahlem (American Sector), GERMANY.

LIVING MATERIAL

The News will welcome especially notices concerning the exchange or sale of Lepidoptera eggs, larvae, and pupas, hoping to revive the old interest in rearing and to re-emphasize the importance of studying the immature stages. Contributors are urged to include accurate locality data with all material sent.

Limited number of cocoons of Platysamia gurvalus, hybrid cecropia-gurvalus, & columbia-cecropia offered in exchange for other living pupae, esp. Callosamia angulifera, Eupackardia calleta, Citheronia regalis.
D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

LIVING COCOONS OF INDIAN SATURNIID MOTHS FOR SALE. Please send U.S. Dept. Agric. importation permit with orders from U.S.A. (see Lep. News 3: p.13). Remittance must accompany orders.

Attacus edwardsii - 50¢; A. cynthia - 12¢; Actias selene - 20¢; Loepa katinka - 20¢; Saturnia grotei - 12¢; Antheraea mylitta - 40¢.

Himalayan Butterfly Co., Shillong, Khasi Hills, INDIA.

Wish to buy, exchange, or sell living Lepidoptera ova; Pseudohazis eglanterina ova especially desired. Mrs. Hazel Chase, 272 N. Union St., Galion, Ohio.

QUESTIONS AND ANSWERS

Q. "Does the autumnal 'rosa' form of Zerene caesonia Stoll occur in the male as well as the female?"

A. Yes, but there is less of the rose tint than in the female. It is not a sharply defined seasonal form, but essentially statistical.

Q. "How nearly complete now is Seitz' project on Macrolepidoptera of the World? Which volumes are not finished yet? Have you heard of any current plans to complete the series?"

A. Vols. 1-4 (Palearctic) are complete, also the rest of the butterflies (vols. 5, 9, 13) and the Indoaustralian and African "Bombyces"(vols.10, 14). Vol. 6 (American Bombyces) is complete except a few plates and the index, and there is some hope of its completion. My information is that a few more fragments may come out, especially where groups are almost complete, and that a good many plates were saved but that most of the text was lost during the war. Of the supplement (only Palearctic) three volumes are complete, but the Geometridae only about two-thirds done. The remaining volumes (Exotic Noctuidae and Geometridae) are in various stages of incompleteness.

W.T.M. Forbes

CHECKLIST OF DEALERS

D.G. Shappirio is assembling for the Lep. News a list of addresses of dealers and commercial collectors of insects, particularly those outside North America. This can be a significant aid to individuals needing to obtain specimens for scientific purposes from countries outside their own. Readers of the News are urged to send on postcards or letters all addresses known to them, in order to make the list as complete as possible. A few months will be allowed in order that members outside North America may reply. Mr. Shappirio's address is:

4811 17th St., N.W.
Washington 11, D.C.

REPRINTS AVAILABLE

A few copies of 3 papers by Hiroshi Inoue are available to Lep. Soc. members who write the Associate Editor. They are: "Miscellaneous Notes on the Japanese Geometridae", Pts. I & III (Entom. World, vol.10: pp.228-232; 1942; and Trans. Kansai Ent. Soc., vol.14: pp.72-83; 1944); and "Notes on Some Japanese Geometridae" (Trans. Kansai Ent. Soc., vol. 14: pp.60-71). The latter describes new genera and species of Hemitheinae and Sterrhinae. U.S.A. members please send postage; all others merely need request the papers.

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NEW MEMBERS

Ballard, W.F.R., East Middle Patent Rd., Greenwich, Conn.
Berg, George H., 5724 Painters St., New Orleans, La. RHOP: esp. Papilionidae of world. Coll. Ex. Buy.
Bullis, Peter E., 239 West Rock Ave., New Haven, Conn. RHOP. Coll. Ex.
Epstein, Hans J., 65 Walker St., Cambridge 38, Mass. RHOP: esp. Papilionidae. MACRO: esp. Sphingidae. Coll. Ex. Buy. Sell.
Hellman, Mr. & Mrs. E.A., Annank. 2F, Helsinki, FINLAND. RHOP: esp. Apollo, Pieris, Argynnis, Brenthis, Lycaena, Acronycta, etc. MACRO. MICRO. Coll. Ex. Sell.
Jennings, Dean, 2825 Louisiana, Longview, Wash.
Murchie, William R., Box 203, Sharon, Pa. RHOP. Coll. Ex.
Saley, Betty, 628 Fairbrook, Northville, Mich.
Wyatt, Colin W., Cobbetts, Farnham, Surrey, ENGLAND. Palearctic & Nearctic RHOP: esp. Alpine & Arctic spp. Coll. Ex. Buy. Sell.

DECEASED

Gloor, Eugene E. (Dr.). (California)

THE LEPIDOPTERISTS' NEWS
The monthly periodical of the Lepidopterists' Society

Membership is open to all persons interested in any aspect of the study of butterflies and moths. The 1949 dues, including subscription to the NEWS, are $2.00 for Regular Membership and $4.00 or more for Sustaining Membership. Please make remittances payable to Charles L. Remington. Price for Vol. 2 is $2.00. No complete sets of Vol. 1 are available.

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Insects

The Lepidopterists' News

THE MONTHLY PERIODICAL OF THE LEPIDOPTERISTS' SOCIETY
c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

Volume III October 1949 **Number 7**

INSTRUCTIONS FOR THE FIELD SEASON SUMMARY FOR 1949

SMITHSONIAN INSTITUTION
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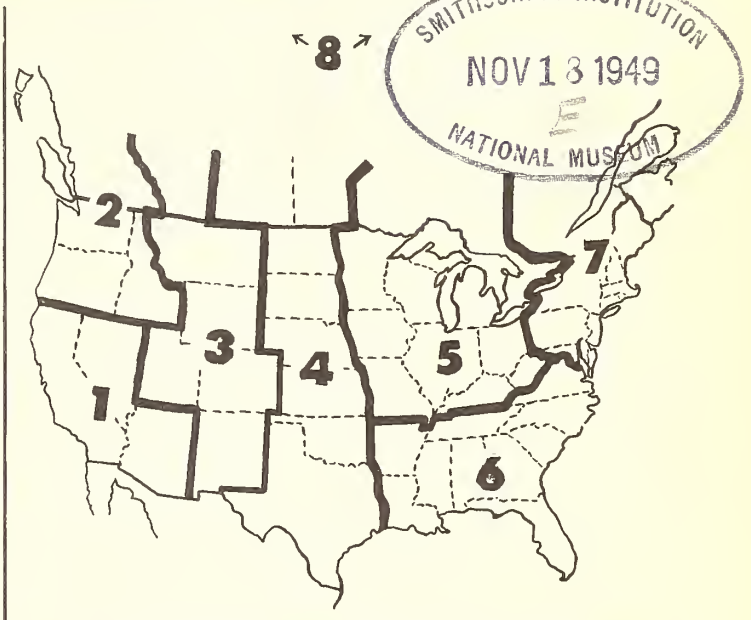
NATIONAL MUSEUM

Number 8 of Volume 1 (1947) and the Supplement of Volume II (1948) of the Lep. News were devoted to the Society's annual field season summaries of Lepidoptera in North America. All Society members who were in the field during all or part of the 1949 season are invited to submit summaries of their observations. The two primary reasons for these annual summaries are: first, the lively interest among Lep. News readers in fresh information on collecting results around the continent during the recent season; and second, the assembling of a permanent reference source which will grow in value as more and more years are on record and factual information accumulates regarding cycles.

The following information is requested from individual cooperators: 1) Were the flight periods of various species earlier or later than the average; precisely what were they for a few representative and fairly abundant species? 2) If the season was earlier or later in spring, did it return to normal or otherwise change as the season progressed? 3) Did unusual climatic events (cold, drought, excessive rain, hurricanes, etc.) occur, and if so what was their effect on Lepidoptera? 4) Was the winter of 1948-49 mild or cold, unusually rainy or snowy or dry, unusually long or short? 5) Did biological or human factors (parasites, forest fires, swamp draining, birds, diseases, etc.) affect Lepidoptera this year in an unusual way or to a significant degree? 6) Did any individual species show unusual occurrences -- rare species suddenly common or vice versa? 7) Did the migrating species make noteworthy flights and if so, what detailed observations were made? 8) Were there any new state or regional records? Please note that it is of little value to call a season "good" or "bad". DETAILS ARE ESSENTIAL.

It is already clear that 1949 has been an exceptional year for certain migrants. Please submit ALL information of any sort on Danaus plexippus, Vanessa cardui, and Celerio lineata. We may devote a special section of the summary to these species.

For 1947 there were 46 members providing individual reports. For 1948 there were about 60, with a postal delay in delivery of the News carrying the announcement. For 1949 we expect that over 100 individuals will report their observations. Every report will be used and then placed in a permanent file for later reference. All participants will be named in the published summaries. We hope particularly for more detailed reports and better representation from such regions as California, the Great Plains (Area 4), and the Southeast (Area 6) than we had for 1948. Strong activity from the relatively few moth collectors is especially invited.



For convenient grouping of the summaries, North America is subdivided into eight fairly uniform faunistic areas, for each of which a general summary will be compiled from the individual reports. The accompanying map shows the eight divisions. Each regional summary will be prepared by an active lepidopterist in the region. Please send reports directly to the regional coordinators listed below. If you collected in more than one region, send separate reports.

Area 1. (Southwest) - LLOYD M. MARTIN, Los Angeles Co. Museum, Exposition Park, Los Angeles 7, Calif.
Area 2. (Northwest) - J.C. HOPFINGER, Brewster, Wash.
Area 3. (Rocky Mts.) - J. DONALD EFF, 820 Grant St., Boulder, Colo.
Area 4. (Great Plains) - DON B. STALLINGS, 216 W. First St., Caldwell, Kansas.
Area 5. (Central) - P.S. REMINGTON, 5570 Etzel Ave., St. Louis 12, Mo.
Area 6. (Southeast) - DR. RALPH L. CHERMOCK, Dept. of Biology, University of Alabama, University, Ala.
Area 7. (Northeast) - DR. EUGENE MUNROE, Institute of Parasitology, Macdonald College, Quebec, CANADA.
Area 8. (Far North) - DR. T.N. FREEMAN, Div. of Entomology, Central Exper. Farm, Ottawa, Ont., CANADA.

The new deadline for reports TO REACH the area coordinators is December 15, 1949.

C.L.R.

NOV 15 1949

NOTES ON COLLECTING SPEYERIA DIANA

by Theodore Bock
Cincinnati, Ohio

I have collected Speyeria diana Cramer for the last 5 years. Many collectors claim that they are rare but I would say that they are not if one goes where they really are at home. Holland says that the Diana is confined in the two Virginias, Northern Georgia, Tennessee, Kentucky and occasionally found in the southern portions of Ohio and Indiana. To this I do not agree as I have traveled through all these states but have never seen one. Ohio and Indiana have no mountains and the Diana does not fly in low land; therefore Ohio and Indiana are out. For this reason it may be considered rare. One may just as well try to find a Papilio homerus in Ohio. Of course there may be a chance that a butterfly or a moth may be transported in an automobile into a far-off different state. I have found a moth hanging on the walls of my house one night which is really not an American but a Mexican species. How did it get way up here?

My collecting ground for the Diana is North Carolina and this season I collected 70 perfect males but only 1 female. I wish to emphasize once more that they do not fly in lowlands but on top of the mountain ridges and then only in certain areas. Every year I go to the same place in North Carolina, an area of about a mile square and there find the males in great numbers. The females, though, are hiding in the dense forest and are extremely hard to net. An abnormal winter will also have a more or less strong influence on the emergence. In normal weather conditions the Diana should emerge promptly on the 1st of July. This season it was different. Last winter being very mild, with an early spring and high temperature they emerged ahead of schedule. Arriving at my favorite hunting-ground on the 28th of June I found them on the wing already and acquainted with their flying habits I would judge that they came out around the 24th of June. Previous years I could take them perfect up to the 15th while this year on the 7th of July most of them were already badly worn. In contrast, in 1947 they were late; owing to a severe winter they came out gradually after the 1st of July. In fact the bulk came out about the 4th and 5th of July. I collected 90 males and 7 females.

Other years I have found them to emerge on the 1st of July and it is then I make my big haul. For the first 24 hours they will settle on red dirt roads, sometimes in small groups with wings closed and easily caught, but also easily overlooked as their underside resembles so much the red dirt. The next 24 hours they will still settle on the roads but with wings expanded. However after two days they will take to their wings, fly fast and higher through the woods and are then more difficult to capture.

With the females it is a different story. At no time will they settle on the roads. I have passed days without even seeing one. Once in a great while one will dare to fly across the road and quickly disappear on the other side into the dense forest. It is then when one may be lucky enough to capture one but into the woods one cannot follow them without getting tangled up and a net is then almost useless. It is also very annoying to get the face into hundreds of spiderwebs so I say it's quite a feat to capture a female. A miss with the net will send them up into the treetops. This year in two weeks' time I have seen but 7 females and captured only one. There seems to be a decrease in the females from year to year. Five years ago, in my best year, I took over 100 males and 7 females and saw some 25 females fluttering around the treetops just before a thunderstorm, but they would never descend to a lower level for a swing with the net.

FIELD NOTES

HAWK MOTH IMPALES ITSELF.- On a recent trip along a country road north of Washington, D.C., my attention was attracted by a hawk moth hanging from a barbed wire fence. I stopped my car and went to examine it. The moth, Phlegethontius quinquemaculata (Haw.), was suspended from a barb which was driven about one-quarter of an inch into its head between its eyes. Otherwise it was unharmed and very much alive. I can think of no other explanation for its plight than that it impaled itself in headlong flight.

Frank C. Cross
Silver Spring, Md.

OVIPOSITION OF CALIFORNIA PHALAENIDAE.- During April of 1948 and of 1949 I observed five species of diurnal Phalaenidae ovipositing in the field. A list of these species and the particular parts of the food plants on which the eggs were laid follows.

Xanthothrix neumoegeni H.Edw.: between the tubes of disc flowers of half-developed blossoms of Chaenactis glabriuscula DC.
Incita aurantiaca H.Edw.: between floral bracts of Gilia virgata (Benth.) var. dasyantha (Jepson).
Annaphila diva Grt.: on underside of leaves of Montia perfoliata (Donn) Howell.
Annaphila depicta Grt.: on the underside of leaves of Nemophila Menziesii H.& A.
Annaphila superba H.Edw. (differs slightly from typical superba from N. California): on floral bracts of Gilia lutea (Benth.)

W.H. Evans
Sun Valley, Calif.

RESEARCH REQUEST

Prof. Lauro P. Travassos needs to obtain the common North American species of the families Adelocephalidae, Arctiidae, and Pericopidae (= Ctenuchidae) to continue his significant research on these groups. He will be glad to provide Brazilian Lepidoptera in exchange. His address is:

Instituto Oswaldo Cruz
Caixa Postal 926
Rio de Janeiro, Brasil

HUNGARIAN LEPIDOPTEROLOGY

II. THE LEPIDOPTERA FAUNA OF THE CARPATHIAN BASIN

by Dr. L.A. Gozmány
Budapest, Hungary

To understand the characteristics and compounding factors of the lepidopterous fauna in the Carpathian Basin, where Hungary also lies, we must investigate the geographical pattern of historical Hungary, and its influence on her zoogeography.

Hungary is situated in Middle Europe, and was, in historical times, circumvented by the Carpathians as her borders. This range, with its 2,000 kms. length demarcates her from the West (following the last mountains of the Alps) going in a large semicircle from northwest through south, ending at the Danube as it enters the Balkans. On the southwest the country once had the Adriatic seacoast and some rivers as borders. The central parts of the country consist of smaller basins, mountains and the Great Plains, connected by numerous rivers. The main importance of this natural unit lies in the fact that the Carpathian Basin is just a big cauldron where species entered 1) during the glacial periods from the north and, during the regressing stages of the glaciers, from the south; 2) from the open western parts leading to western Europe; 3) from the east (alpiphil and psammophil) and REMAINED HERE, finding all the necessary habitats and bio-conditions for their survival, among numerous endemic brethren.

Let us examine these zoohistorical factors in due consequence. I shall consider only Macrolepidoptera, but the following holds good for "micros", too.

1.) Northern species, immigrants into the Carpathian Basin (either because as the inhabitants of higher mountains they acclimatized to the colder climate of our Northern Ranges - alpine and boreal species - or were driven south by the approach of the glaciers) were, among others, as follows:

Boloria pales Schiff.
Brenthis amathusia Esp.
Comacla senex Hbn.
Pericallia matronula L.
Pygaera timon Hbn.
Panthea coenobita Esp.
Diarsia hyperborea Zett.
Diarsia dahli Hbn.
Operophtera fagata Scharfenb.

These all found here the same climate, elevation (Mts. Tátra, etc.), and habitats (sphagnum moors, birch woods) as those of Poland, Finland, etc., and are now all established in the Carpathian Basin.

During and after the glacial recession, nemoral and psammophilous species pushed north from Italy, Asia Minor, the Balkans and the Mediterranean Basin, slowly acclimatizing to their new sustaining country, that in its southern and central parts is not very different from the Mediterranean (bushy lands, arid areas, warm swamps, etc.), and northern Africa (the Deliblat desert). Among these are:

Pieris argane Hbn.
Jolana jolas O.
Libythea celtis Laich.
Polygonia egea Cr.
Synanthedon stomoxyformis Hbn.
Chaemaesphecia masariformis O.
Hyala punctum O.
Pelosia obtusa HS.
Hypopta caestrum Hbn.
Euxoa cos Hbn.
Cucullia celsiae HS.
Grammodes stolida F.

2.) Western European species had ample means to become compatriotic with Eastern ones in Hungary, winding their way through the hilly regions along the Danube and the westernmost frontiers of the country. They found climate, topography, and biotops the same as in their original breeding habitats. Such species are:

Coenonympha oedipus F.
Laelia coenosa Hbn.
Hoplitis milhauseri F.
Crymodes maillardi Hbn.
Habryntis scita Hbn.
Omia cymbalariae Hbn.
Eupithecia gueneata Mill.

3.) Eastern species found, surprisingly, some places in Hungary similar to their (a) Volgaic, (b) Caucasian or even (c) Amurian territories (in the Great Plains, the Eastern Carpathians, small basins in Transsylvania, etc.). There are species here whose nearest known collecting localities are the Amur River (Vanessa urticae maxima, Zanclognatha stramentacealis, etc.)! Some of these Eastern species are:

(a) Melanargia japygia suwarowius Hbst.
Gnophos stevenaria Bdv.

(b) Pararge clymene Esp.
Perisomena ceacigena Cupido
Hyssia cavernosa Ev.
Athetis lepigone Möschl.
Amphipyra micans Ld.
Gnophos stevenaria Bdv.

(c) Vanessa urticae maxima Butl.
Argynnis laodice Pall.
Athetis lepigone Möschl.

Some species, occurring in the relict swamps and turfmoors of the Great Hungarian Plains, can be found nearest the Sarepta plains (southern U.S.S.R.):

Melanargia japygia v. suwarowius Hbst. (Foreign collectors exterminated this variation; see Part I, Lep. News, vol.3: p.43)

Micros:

Epibactra sareptana HS.
Atychia pumila O.
Ateliotum hungaricellum Z.
Depressaria venusulella Möschl.
Cryptolechia sareptensis Möschl.
Teleia anguinella HS.
Megacraspedus lagonellus HS.
Chilopsephalus fallax Mn.

From a zoogeographical point of view we can also classify Hungarian Lepidoptera as the citizens of some 13 faunal elements*. These elements designate geographical territories relative to representatives of fauna. When we state that a given species belongs to the Baltic faunal element it means not only that the center of occurrence of said species is the Balticum (Northern Germany, etc.) but that the places where the species also occurs outside of the Balticum proper has environmental characteristics corresponding to the country of origin (the Balticum).

This unsurpassed quantity and convergence of faunal elements in such a relatively small place as zoogeographical Hungary is the cause why the country has an incredible melée of Lepidoptera in her fauna, NOT TO BE FOUND IN ANY OTHER EUROPEAN COUNTRY! That was why foreign collectors came to Hungary: she contains treasures! (See: Part I, ibid). That is why even today, almost every year, new species to our fauna are discovered, sometimes unbelievable occurrences, as their original localities are in faraway countries (Asia Minor, Spain, etc.).

The faunal elements, according to Szent-Iványi, and Holdhaus, are briefly, with a few examples for each, as follows:

1. BOREAL (Selenephera lunigera Esp., Xanthorrhoe lignata Hbn.)

2. BOREOALPINE (Aricia donzelii B., Zygaena exulans Hochw., Orodemnias quenselii Payk.).

3. BALTIC (Lycaena amphidamas Esp., Endrosa kuhlweini Hbn.).

4. PONTIC (Pararge roxelana Cr., Coenonympha leander Esp., Marumba quercus Schiff.).

5. PONTOMEDITERRANEAN (Zerinthia hypermnestra Sc., Pieris manni Mayer, Melitaea arduinna Mayer).

6. MEDITERRANEAN (Charaxes jasius L., Ocnogyna parasita Hbn., Catocala conversa Esp.).

7. ATLANTOMEDITERRANEAN (Agrumenia fausta L., Aspilates ochrearia Ross.).

8. ATLANTIC (1 sp. only: Sphecia crabroniformis Lew.).

9. ALPINIC (Euxoa birivia Schiff., Gnophos pullata Schiff.).

10. ILLYRIC or LYBURNIAN (Oreopsyche birói Rbl., Celama ancipitalis HS.).

11. SIBERIAN-CENTRALEUROPEAN (Papilio machaon L., Pieris brassicae L.).

12. GEOPOLITIC (Vanessa cardui L., Herse convolvuli L.).

13. SYBILLIC or EUROPEAN-EAST ASIAN (Sphinx pinastri L., Lophopteryx cuculla Esp., Oenistis quadra L.).

The intrusion of "foreign" Lepidoptera continues even in our own days. The trend is strictly northward, the cause as yet unknown. I have made observations, jointly with my colleagues, on the northward trend of the following southern species:

Plebejus sephyrus Friv.
Aricia donzelii Bdv.
Libythea celtis Laich.
Eilicrinia trinotata Metzn.
Orthostixis cribraria Hbn.
Ophiusa algira L.
Callogonia virgo Tr.
Polygonia egea Cr.

Hungary's special geological, geographical, botanical, and climatic structure is also responsible for a series of unique endemics, famous species all:

Nola pannonica Kovacs
Rhyparioides metelkana Ld.
Amicta ecksteini Ld.
Acanthopsyche zelleri Mén.
Epichnopteryx undulella F.Rös.
Rebelia sappho Mill.
Monima schmidti Diósz.
Athetis telekii Diósz.
Oxytripia orbiculosa Esp.
Cucullia balsamitae Bdv.
Cucullia formosa Rghf.
Porphyrinia pannonica Friv.
Eilicrinia cordiaria f. röslerstammaria Stgr.
Agriopis ankeraria Stgr.
Cleogene ostrogowichii Caradja
Chondrosoma fiduciaria Anker
Boarmia viertlii Bohatsch.
Eupithecia alliaria Stgr.
Psodos telekii Diósz.
Psodos diószoghyi Schmidt

It is worthwhile to collect Lepidoptera and to investigate ecological, biological, phenological, biotopical aspects, to find out more of the life-cycles of our Lepidoptera species in Hungary, as in so many other parts of the world.

*See: Szent-Iványi, "The Elements of the Macrolepidoptera Fauna of Historical Hungary", Folia Entom. Hungarica, vol.3, Fasc.1-4; 1938.

BRIEF BIOGRAPHIES

19. R.P. Joseph de Joannis (1854-1932)

Joseph de Joannis originated from Anjou (one of the wine provinces of France). He worked during a part of his life with his brother R.P. Léon de Joannis. The possibility of easily obtaining exotic specimens through missionaries made the two brothers interested in the world fauna, sharing the work between them. Léon, who lived in the country, had the task of breeding and of preparing; Joseph, who lived in Paris, had the task of determining, classifying and publishing. Long stays in the island of Jersey, in Canterbury (England) and in Louvesc (France: Ardèche) enabled Joseph de Joannis to collect a great many species of Lepidoptera, to make numerous breedings and even to discover new species. In Paris he carried on his observations and rearing, especially of Micros, and he never went about, even in town, without small tubes in his pocket. Finally every year he went to London to study the material that he could not determine in Paris and it is in this way that he got in touch with the English authors, especially Hampson and Meyrick.

In 1902 he was asked to study the Lepidoptera from Tonkin (Indochina) and from then, during almost thirty years, J. de Joannis accumulated material to use for his contribution to the Fauna of Lepidoptera from Tonkin, published in 1928 and 1929 in Annales de la Société entomologique de France. The Micros were studied in this work by Meyrick. He also knew very well the fauna of the Mascareignes Islands, on which he published many papers. One of his most important works is the revision of the Cecidogenous Lepidoptera (Ann. Soc. entom. France, 1932).

But, above anything else, he was a Microlepidopterist. With Constant he finished the Monography of the Phycitinae, work of his Master Ragonot. Even if he had never published any important works on the Micros, he contributed a great deal in the development of the study of them in France, principally when L. Lhomme started his publication L'Amateur de Papillons - today Revue française de Lépidoptérologie - and in determining the specimens that different colleagues sent him.

He was a familiar figure in the National Museum in Paris where he came to study each week. It is there, as was his desire, that his important collection is placed. This collection remains, in particular for the Micros, the best of documents. By his way of living he occupied only one room so, by 1920, he gave a part of his collection of Macrolepidoptera to the National Museum so as to keep towards the end of his life only the Micros. The last box of Micros has number 583 and almost the entire collection (up to number 472) was in boxes measuring 78 cm. x 52 cm. Today almost all of the families have been included in the general collection of the National Museum. In this collection were many types, some of which were described by Meyrick.

Pierre E. Viette
Paris, France

The Entomological Society of America will hold its annual meeting for 1949 at Tampa, Florida, December 13-16.

PERSONALIA

Dr. A. DIAKONOFF spent part of the summer on a collecting trip in Celebes for the Zoölogisch Museum en Laboratorium in Buitenzorg, Java.

P.E.L. VIETTE, of the Muséum National d'Histoire Naturelle in Paris, is spending October and November at the British Museum working with Dr. E.C. Zimmerman on the Microlepidoptera of the Hawaiian Islands.

JOHN L. SPERRY (not "Commander"; see Lep. News 3: p.37) spent the early summer in the Wallowa Mts. of northeastern Oregon and found that: "The Geometridae have a Colorado Rocky flavor with traces of Canadian fauna and a few all the Wallowas' own."

We were sorry to learn of the passing in New York City of Dr. ANDREY AVINOFF, a Charter and Sustaining Member of the Lepidopterists' Society, on 16 July 1949, at the age of 65 years. A noted lepidopterist, he was Director of the Carnegie Museum in Pittsburgh from 1926 to 1945.

Professor FILIPPO SILVESTRI died at Bevagna, Italy, on 1 June 1949. One of the world's greatest entomologists, he specialized in the Thysanura, Entotrophi, Isoptera, termite and ant guest insects and in economic entomology. He was for many years the director of the Laboratory of Entomology of the Portici branch of the University of Naples, and he had only retired in 1948. He was a Fellow of the Entomological Society of America.

Many of the most successful Lepidoptera collectors have found that a clean, white net bag alarms specimens being stalked. Some suggest dyeing the bag green; others dip a new bag in strong tea.

SPHINGIDAE COLLECTING IN NORTH-CENTRAL VENEZUELA IN JUNE, 1949

by Margaret M. Cary
Philadelphia, Pennsylvania

Since collecting Sphingidae in the cloud forests of north-central Venezuela is very much like collecting Sphingidae in our own subtropical or tropical North America and Mexico I think perhaps readers of The Lepidopterists' News will be interested in a brief account of an expedition under the auspices of the Academy of Natural Sciences of Philadelphia and the Institute of Jamaica at Kingston, Jamaica. This was a two-person expedition made up of my nephew, John W. Cadbury of Pemberton, New Jersey, and the author.

We are undertaking an interesting piece of research into the causes of distribution and the origin of species of the Sphingidae of the Caribbean region, embracing islands, countries and even far southern Florida. This study entails in its first stage the collection of a long series of those similar species occurring in these islands and countries, or where there are no similar species in a genus, of any representative of the same genus. Where certain similar species have undergone such marked changes as to establish variations or even new species we hope to rear and study instars and foodplants of larvae of such species, recording all our observations with relation to altitude, climate, humidity, etc.

A few of the species which have undergone marked changes in this Caribbean region are Pholus vitis, which in Jamaica becomes P. vitis hesperidum Ky., Pachylia syces which becomes P. syces insularis Rothschild & Jordan, Erinnyis obscura which becomes E. obscura pallida Grote or even Erinnyis jamaicensis Clark, and others of great interest.[1]

We spent the month of June, 1949, collecting at Rancho Grande in the cloud forest jungle of the National Park of Aragua, Venezuela. This region is about 3500 feet high, has a cool temperature and very high humidity. Although we also used several high-powered gasoline pressure lamps in our collecting, we were able to have one 200 watt bulb attached to a roof some fifty feet above ground and this shone far out across the jungle, attracting on rainy or foggy nights many more insects than the pressure lamps hung nearby. There are no flowers in this jungle over which we could collect at dusk, and besides darkness falls here very suddenly, so that we had to confine our collecting to lights.

By seven o'clock the moths began to come, collecting under the light on a white wall, and the best hours for Sphingidae collecting were between 7:30 and 11:30. On very foggy nights we worked much later, occasionally staying up all night. On nights of bright moonlight we went to bed early, setting our alarm for 2:30, and did our collecting until dawn. This was not very productive for Sphingidae, but there were certain larger moths, especially members of the saturniid genus Rothschildia which came only at this time, so that we found much of interest in this dawn collecting. The collecting was most exciting; insects of all orders came, often in such hordes as to cover us completely and to swarm into our eyes, nose, and mouth. Of course these excellent nights did not often occur, and usually on such nights the kinds of species were less scarce and interesting than on a more moderate night.

Although we took some thousands of moths in other families and other orders of insects for our friends and the above institutions, we were able to secure 637 Sphingidae, representing 50 species and 4 subspecies. After these have been mounted and identified with certainty, we may have 52 species, but of this we are not yet certain. The list is as follows:[2]

Herse cingulata (Fabricius)
Cocytius duponchel (Poey)
Phlegethontius florestan (Stoll)
  scutata (Rothschild & Jordan)
  albiplaga (Walker)
  ochus (Klug)
  rustica (Fabricius)
  diffissa tropicalis (Rothschild & Jordan)
  corallina (Druce) or lichenea (Burmeister)
Protambulyx eurycles (Herrich-Schaeffer)
  strigilis (Linné)
Isognathus rimosa papayae (Boisduval)
Amplypterus gannascus (Stoll)
  tigrina (Felder) and race simera Lichy
Erinnyis alope (Drury)
  ello (Linné)
  obscura crameri (Schaus)
  oenotrus (Stoll)
  lassauxi (Boisduval) and races omphaleae (Boisduval) and impunctata Rothschild & Jordan
  domingonis (Butler)
Hemeroplanes parce (Fabricius)
  nomius (Walker)
  calliomenae (Schaufuss)
Stolidoptera tachasara (Druce)
Perigonia lusca tenebrosa (Felder)
  lusca restitua (Walker)
  stulta Herrich-Schaeffer
  pallida Rothschild & Jordan
Pholus anchemolus (Cramer)
  triangulum Rothschild & Jordan
  satellitia lichaon (Cramer)
  phorbas (Cramer)
  labruscae (Linné)
  vitis (Linné)
  obliquus Rothschild & Jordan
Xylophanes tyndarus (Boisduval)
  porcus continentalis Rothschild & Jordan
  chiron nechus (Cramer)
  pyrrhus Rothschild & Jordan
  amadis meridanus Rothschild & Jordan
  neoptolemus (Stoll)
  ceratomioides (Grote & Robinson)
  germen yurakani Lichy
  titani (Druce)
  pluto (Fabricius)
  tersa (Linné)
  resta Rothschild & Jordan
  anubus (Cramer)
  crotonis (Walker)

[1] See account of collecting Jamaican Sphingidae in Lep. News (vol.2: p.86; 1948).

2. Note no Pachylia, Epistor, or Sesia and few Phlegethontius. These come in greater numbers in April.

REVISED CATALOGUE OF THE THECLINI (LYCAENIDAE) OF JAPAN, KOREA, SAKHALIN, AND FORMOSA

by Yoshio Okada
Kyoto, Japan

For the last fifteen years, many synthetic papers on the so-called genus Zephyrus or Thecla have been published in Japan (references 1-7,11), and the development of the taxonomy of the tribe Theclini has made remarkable progress. Above all, A. Sibatani, in collaboration with S. Ito (9), described some new genera and classified Theclinae of Japan and its surroundings as a result of their genitalic survey of Zephyrus and its relatives. Afterwards A. Sibatani (10) corrected the terminology of the male genitalia and the unreasonable classification of Theclinae applied in his former paper. At the same time, others made clear parts of the life history of Theclini of Japan. Recently, T. Shirôzu (8) emphasized the importance of the West-Chinese elements in Japanese butterflies and cited most of the Theclini of Japan as instances of them.

As these contributions seem to be unknown to foreign entomologists, I should like to summarize them according to the above-cited works by Sibatani on that tribe. According to Sibatani's works, the subfamily Lycaeninae (= Theclinae) of Japan, Korea, Sakhalin and Formosa is divided into the following tribes:

Lycaenini	(Lycaena, Heliophorus)
Sithonini	(Spindasis, Horaga, Catapoecilma, Tajuria, Camena)
Strymonini	(Drina, Amblopala, Deudorix, Rapala, Strymon, Callophrys, Satsuma)
Theclini	(Artopoëtes, Coreana, Japonica, Thecla, Iratsume, Neozephyrus, Araragi, Antigius, (Euaspa), Wagimo)
Arhopalini	(Arhopala, Mahathala)

TRIBE THECLINI

Genus Artopoëtes Chapman, 1909. Sibatani & Ito settled this curious genus into the Theclini considering the similarity of the fore tarsus and ♂ genitalia to those of the genera Coreana and Japonica. A. preyeri Moore*[1] from Japan (Hs,Hk,Sh,Ky[2]) and Korea is common in central Japan from June to July.

Genus Coreana Tutt, 1907. The next three species, with shorter and broader valvae than the genus Japonica, are recorded from within our limits: C. raphaelis Oberthür* and C. michaelis Oberthür from Korea; C. ibara Butler from Japan (Hk,Hs,Ky), locally common in the mountainous region of central Japan in July.

Genus Japonica Tutt, 1907. Genera Artopoëtes, Coreana, and Japonica, which are provided with the divided tarsus of the fore leg, form a primitive group of the Theclini. However, Japonica can be distinguished from the others by the following points: larger saccus, v-formed juxta, slender valvae and more developed ampulla.
J. lutea Hewitson is from Japan (Hk,Hs,Sh,Ky), Korea, Formosa; J. saepestriata Hewitson* is from Japan (Hk,Hs), Korea. These two orange species are common in central Japan in June.

Genus Thecla Fabricius, 1807.
Subgenus Shirozua Sibatani & Ito, 1942. Despite the similarity of the external appearance to Japonica, the genitalia of Shirozua closely resemble the Thecla type. At first, Sibatani & Ito described Shirozua as a new genus, but Sibatani settled it later in Thecla.
T. (S.) jonasi Janson* from Japan (Hk,Hs), Korea, is locally common in northern Japan; T. (S.) comes Leech is from Formosa.

Subgenus Thecla (s.str.) Two Korean butterflies T. (T.) betulae Linné* and T. (T.) betulina Staudinger have short and broad valvae, but no saccus.

Genus Iratsume Sibatani & Ito, 1942. This peculiar genus has only one species, orsedice Butler*, whose genitalia are characterized by isolated socii, projected ampulla, flat juxta, and small signa. It appears in June and July in the mountainous region of central Japan (Hs,Sh,Ky).

Genus Neozephyrus Sibatani & Ito, 1942. The ♂ genitalia are hard chitinous, brachia frequently thorny, ventral margin of ampulla smooth, saccus prominent. Most of the males of the species in this genus have the gorgeous green color on the upperside of the wings, and many females have red, blue, or red and blue spots in the blackish-brown ground color of the upperside. They fly in crowds on high trees exposed to the setting sun. This genus is divided into three groups:

1. N. hecale Leech from Formosa; N. taxila Bremer* from Japan (Hk,Hs,Sh,Ky), Korea, Sakhalin, common in every place in Japan; and N. coruscans Leech from Formosa.

2. N. hisamatsusanus Nagami & Ishiga, a very rare species from Japan (Hs,Sh,Ky); N. scintillanus Leech, N. mushaellus Matsumura, N. taiwanus Wileman, all from high elevations of Formosan mountains; N. smaragdinus Bremer from Japan (Hk,Hs,Sh,Ky), Korea, Sakhalin, locally common in the mountainous region of Japan in July and August; N. nishikaze Araki & Sibatani from Formosa; N. aurorinus Oberthür from Japan (Hk,Hs, Sh,Ky), Korea; and N. duma Hewitson and niitakanus Kano from Formosa.

3. N. ataxus Hewitson from Japan (Hs,Ky) uncommon.

J. Sonan (11) and Y. Araki & A. Sibatani (1) explained in detail the Formosan species of Neozephyrus.

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[1] * Signifies generotype.
[2] Abbreviations: Hk:Hokkaido; Hs:Honshu; Sh:Shikoku; Ky:Kyushu.

Genus Favonius Sibatani & Ito, 1942. The ♂ genitalia lack saccus and thorn of brachia, but are provided with more complicated valvae than Neozephyrus. Most males have the blue-green color on the upperside, but females rarely have the blue or red spots on the upperside of the fore wings. F. yuasai Shirôzu, from Japan (Hs), is a very rare species which was described by T. Shirozu two years ago; F. orientalis Murray* from Japan (Hk,Hs,Sh, Ky), Korea, is common in every part of Japan; F. saphirinus Staudinger is uncommon in Japan (Hk,Hs), Korea; F. fujisanus Matsumura from Japan (Hs,Sh, Ky) is uncommon; F. jezoensis Matsumura is from Japan (Hk,Hs), Korea; and F. ultramarinus Fixsen is from Japan (Hk,Hs), Korea. The last two species closely resemble each other and fly in the mountainous region of north Japan in July and August.

Genus Teratozephyrus Sibatani, 1946. With an undeveloped uncus, this is an intermediate genus between the Neozephyrus group and the Antigius group. T. arisanus Wileman* is from Formosa.

Genus Araragi Sibatani & Ito, 1942. This genus is characterized by an elongate uncus.
A. enthea Janson* from Japan (Hk,Hs), Korea, Formosa, is common in Hokkaido and northern Honshu.

Genus Antigius Sibatani & Ito, 1942. Two-branched uncus, simple valvae and naked eyes characterize this genus.
A. attilia Bremer*, from Japan (Hk,Hs,Sh,Ky), Korea, is common in central Japan in June; A. butleri Fenton, from Japan (Hk,Hs,Sh), Korea is uncommon.

Genus Wagimo Sibatani & Ito, 1942. It is vague to distinguish this genus from Antigius by ♂ genitalia with slender two-branched uncus and slender valvae, but decisive by female genitalia.
W. signatus Butler*, from Japan (Hk,Hs), Korea, is rare.

REFERENCES

(1) Araki, Y., & Sibatani, A., 1942. Zephyrus, vol. 9: pp.83-99, pls.7,8.
(2) Esaki, T., 1934. Zephyrus, vol.5: pp.74-86,pl.22.
(3) -------- 1934. Zephyrus, vol.5:pp.194-211, pl. 27.
(4) -------- 1935. Zephyrus, vol.6: pp.51-58,pl.5.
(5) -------- 1936. Zephyrus, vol.6:pp.195-204,pl.13.
(6) -------- 1937. Zephyrus, vol.7: pp.96-105, pl. 9.
(7) -------- 1938. Zephyrus, vol.7: pp.223-234, pl.16.
(8) Shirôzu, T., 1947. Matsumushi, vol.2: pp.1-8.
(9) Sibatani, A. & Ito, S., 1942. Tenthredo, vol.3: pp.299-334.
(10) Sibatani, A., 1946. Bull. Lep. Soc. Japan, vol. 1: pp.61-86.
(11) Sonan, J., 1940. Trans. Nat. Hist. Soc. Formosa, vol.30: pp.77-85.

ALFRED RUSSELL WALLACE ON BUTTERFLY HUNTING

"During my very first walk into the forest at Batchian, I had seen sitting on a leaf out of reach, an immense butterfly of a dark colour marked with white and yellow spots. I could not capture it as it flew away high up into the forest, but I at once saw that it was a female of a new species of Ornithoptera or 'bird-winged butterfly', the pride of the Eastern tropics... During the two succeeding months I saw it only once again ... till one day ... I found a beautiful shrub ... a species of Mussaenda, and saw one of these noble insects hovering over it, but it was too quick for me, and flew away. The next day I went again to the same shrub and succeeded in catching a female, and the day after a fine male. I found it to be as I had expected, a perfectly new and most magnificent species, and one of the most gorgeously colored butterflies in the world... The beauty and brilliancy of this insect are indescribable, and none but a naturalist can understand the intense excitement I experienced when I at length captured it. On taking it out of my net and opening the glorious wings, my heart began to beat violently, the blood rushed to my head, and I felt much more like fainting than I have done when in apprehension on immediate death. I had a headache the rest of the day, so great was the excitement produced by what will appear to most people a very inadequate cause."

A.R. Wallace, in The Malay Archipelago, pp.257-258.

Dr. P.H.H. Gray, of Macdonald College, Quebec, suggests this passage by the co-discoverer of evolution and great naturalist of the East Indies as the best example of enthusiasm in a butterfly hunter.

A NEW JAPANESE PERIODICAL

The Akita Kontyu Dokokai (Akita Insect Lovers' Society) was established on 19 November 1948. In May 1949 it began publishing Ageha (Papilio), with Tadashi Matsuyama as editor. Included in the first issue are articles on such subjects as: winter hibernation of Papilio; the amount of food eaten by a Polygonia larva; observations on the path of butterfly flight; and notes on Hypolimnas and Luehdorfia. The first issue is entirely in Japanese, which is disappointing after the fine example set by Matsumushi, in which a table of contents and brief summaries of important papers are always in a European language. While it is apparently mimeographed, there are numerous useful figures in Ageha. The editors of the Lep. News extend compliments on the new venture to Mr. Matsuyama and his associates. He may be addressed:

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No.1, Kaminakajima-honmachi
Akita, Japan

PLEASE NOTIFY THE NEWS EDITORS OF CHANGES OF ADDRESS PROMPTLY

RECENT LITERATURE ON LEPIDOPTERA

Under this heading are listed each month recent papers from all the scientific journals which are accessible to us and our cooperating abstractors. It is hoped eventually to make our coverage of the world literature as complete as possible. Members outside North America are urged to send us references of Lepidoptera papers from journals unavailable to us. Papers devoted entirely to economic aspects will be omitted. Reprints are solicited from all publishing members. Initials of cooperating abstractors are as follows: (P.B.)- P.F. Bellinger; (A.D.)- A. Diakonoff; (C.dP.)- C.F. dos Passos; (L.G.)- L.A. Gozmány; (C.R.) - C.L. Remington; (T.S.)- T. Shirōzu.

197. Bank Jr., G., "Lepidopterologische vangsten in 1947" (In Dutch). Tijdschr. voor Entomol., vol.91, Verslag: pp.XXXIX-XL. 1 May 1949. Gives collecting notes on Macrolepidoptera in Holland in 1947. (A.D.)

198. Bentinck, G.A., "Nieuwe en zeldzame Lepidoptera" (In Dutch). Tijdschr. voor Entomol., vol.91, Verslag: pp.XIX-XX. 1 May 1949. Gives a list of rare Macro- and Microlepidoptera captured in 1947 in Holland; new for the fauna are Opostega auritella (Lyonetiidae), Acalla shepherdiana (Tortricidae), and Conchylis implicitana (Eucosmidae). (A.D.)

199. Bentinck, G.A., "Bijzondere Lepidoptera" (In Dutch). Tijdschr. voor Entomol., vol.91, Verslag: pp.LXIII-LXIV. 1 May 1949. Collecting notes on Macro and Microlepidoptera in Holland in 1948. (A.D.)

200. Blackwelder, R.E., "Notes on the Preparation of Catalogs." Coleop. Bull., vol.3: pp.33-37. 11 July 1949. Discussion of problems of making entomological catalogues, by a noted cataloguer. (C.R.)

201. Carpenter, G.D. Hale, "Mimicry, and Ecogenotypical Variation." Amer. Naturalist, vol.82: pp.234-240. July-Aug. 1948. Evidence is presented, largely from the Lepidoptera, that similar environmental effects are inadequate to account for resemblance between insects in cases of supposed mimicry. Some direct evidence for protective value of concealing and warning coloration is also given. (P.B.)

202. Conder, P.J., "Observations on a migration of Pieris brassicae L. at Skokholm Island, Pembrokeshire, in August, 1947." Proc. R. Ent. Soc. Lond. (A), vol. 24: pp.35-38, 2 figs. 15 June 1949.

203. Diakonoff, A., "Microlepidoptera from Indo-China and Japan." Bull. Mus. Hist. Nat. Paris, vol.20: pp. 267-272, 2 figs. April 1948. Describes Epagoge stenochorda (Japan); Homona magnanima (Japan); Snellenia ignispergens (Japan). Gives records for a number of other species. (P.B.)

204. Evenden, J.C., "An epidemic of the Douglas-Fir Tussock Moth." Northwest Science, vol.22: pp.53-59. May 1949.

205. Geijskes, D.C. & J. Doeksen, "Nieuwe gegevens over de insecten-fauna van Terschelling" (In Dutch). Tijdschr. voor Entomol., vol.90, 1946: pp.16-34. 1 July 1949. A survey of the insect fauna of Terschelling Is., in the North Sea, made in July 1937. 15 species of Microlepidoptera, 25 species of Macrolepidoptera are recorded. (A.D.)

206. Gorter, A.J., "Nachtvlinders op bloeiende Epilobium" (In Dutch). Entomol. Berichten, vol.12: p.380. 21 May 1949. Gives list of 24 spp. of Heterocera collected in twilight on flowers of Epilobium in Holland. (A.D.)

207. Greer, Thomas, "Entomological Notes from East Tyrone 1948." Ent. Rec. & Journ. Var., vol.61: pp.67-68. June 1949.

208. Harper, G.W., "Lepidoptera of West Sussex, 1948." Ent. Rec. & Journ. Var., vol.61: pp.65-66. June 1949.

209. Herbulot, C., "Paramathia, nouveau genre de Larentiinae palearctique (Lep. Geometridae)." (In French). Misc. Ent., vol.45: p.118. 1948. Describes new genus PARAMUTHIA (type - Geometra sabinata Hbn.); also includes obscuraria of Asia. Related to Trichopteryx, Trichopterigia, Episauris. (C.R.)

210. Hovanitz, William, "Interspecific Matings between Colias eurytheme and Colias philodice in Wild Populations." Evolution, vol.3: pp.170-173, 4 tables. June 1949. Compares frequency of eurytheme and philodice in mating pairs to frequency in population (Ohio), concluding that mating is at random. Abstractor believes that small number of copulations (21), and especially of "interspecific" ones (5), makes any conclusions shaky. (C.R.)

211. Lempke, B.J., "Catalogus der Nederlandsche Macrolepidoptera" (In Dutch with Observations in English). Tijdschr. voor Entomol., vol.90, 1946: pp.61-197. 1 July 1949. The eighth part of this elaborate catalogue, in which fam. Agrotidae is finished (pp.61-145) and Geometridae begun (pp.146-197). Observations in English: differences between Sarrothripus revayana and S. degenerana: pp.97-99 (f.21, fore wing of five forms of S. revayana, f.22, f.23 ♂ genitalia, f.24 aedoeagus, f.25 ♀ genitalia of these 2 spp.); pp.115-116 on differences between Plusia pulchrina and P. iota (f.26: cornuti, f.27 ♀ genitalia); forms of Hypena rostralis, pp.142-143; nomenclature of Sterrha rusticata, p.159. Figs. 29-32 of genitalia and wing patterns of Dutch Geometridae. (A.D.)

212. Michener, Charles D., "Parallelisms in the Evolution of the Saturniid Moths." Evolution, vol.3: pp. 129-141, 8 figs. 15 June 1949. Discusses in some detail, with phylogenetic trees, phylogeny of genera of Saturniidae, showing subfamilies Rhescyntinae, Citheroniinae, Hemileucinae, Agliinae, Ludiinae, Salassinae, Saturniinae. Extensive discussion of independent origin of similar characters in unrelated Saturniids. (C.R.)

213. Meulen, G.S.A. van der, "Zeldzame en bijzondere Macrolepidoptera" (In Dutch). Tijdschr. voor Entomol.,vol.91, Verslag: pp.XXX-XXXI. 1 May 1949. Collecting notes of Macrolepidoptera for 1947 in Holland. Hoplodrina superstes Tr. (Caradinidae) is new for the fauna. (A.D.)

214. Obraztsov, N., "Three new species of Ceryx Wallgr. from Java and Sumatra (Lep., Amatidae)". Tijdschr. voor. Entomol., vol.90, 1946: pp.57-60. 1 July 1949. Ceryx javanica (W. Java), C. sumatrensis (Sumatra), and C. burgeffi (W. Java) are described as new, with photos. (A.D.)

215. Peterson, Björn, "Die regionale und synökologische Gliederung der Schmetterlingsfauna des jämtlandischen Gebirges." (In German). Ent. Tidskrift, vol.70: pp. 184-192, 5 figs. 1949. Gives an ecological classification of the Lepidoptera fauna of the Jämtland region of Lapland, with list of characteristic spp. of heather, bog, meadow, and marsh habitats and with photos of habitats. (C.R.)

216. Picken, L.E.R., "Shape and Molecular Orientation in Lepidopterous Scales." Phil. Trans. R. Soc. (B), vol.234: pp.1-28, 3 figs, 3 pls. 10 Aug. 1948. Study of chemical and physical morphogenesis of scales in Ephestia sericarium (=kühniella). (P.B.)

217. Regteren Altena, C.O. van, "Is Melitaea didyma (Esper, 1779) in Nederland gevangen?" (In Dutch). Entomol. Berichten, vol.12: pp.374-375. 1 May 1949. 2 specimens of this nymphalid, unknown in Holland before, received in the Leiden Museum from a Dutch locality. (A.D.)

218. Roepke, W., "The genus Nyctemera Hübner." Trans. R. Ent. Soc. Lond., vol.100: pp.47-70, 14 figs., 2 pls. 25 Mar. 1949. A complete revision of the Javan species of these Lithosiidae, and notes on some Malayan species. Describes as new: N. diaphana, N. lugens and N. limbata (all from Celebes); also N. crameri crameri, previously known as N. laticinia (nec Cramer). All species mentioned, as well as the ♂ genitalia of most, are figured. (P.B.)

219. Roepke, W., "Het vervaardigen van genitaal-preparaten" (In Dutch). Entomol. Berichten, vol.12: p.391. 21 May 1949. The following method for making genitalia slides of large Lepidoptera is recommended. Macerate during 10-20 min. on water bath in 10% KOH or NaOH, transfer in water, warm on water bath for 10-15 min. in a mixture of phenolum liquefactum and chloral hydrate (1:1), transfer to creosote for a few minutes and mount in Canada balsam. (A.D.)

220. Roepke, W., "Nomenclatorische aanteekeningen 1" (In Dutch). Entomol. Berichten, vol.12: pp.372-373. 1 May 1949. In Holland occur Saturnia pavonia, S. pyri, and S. spini. It is desirable that the first two names be validated by the Intern. Congress of Nomencl. If Linné described a variety from southern Sweden, the Central European species must be called S. pavonia carpini Schiff.; Eudia Jordan 1911 is a synonym of Saturnia Schrk. 1802. (A.D.)

221. Roekpke, W., "Uitheemsche insecten in Nederland en waarnemingen omtrent Colias (Lep.)" (In Dutch). Tijdschr. voor Entomol., vol.91, Verslag: p.VII. 1 May 1949. Observations on occurrence of Colias hyale and C. croceus, migrant Pieridae, in Wageningen, Holland. (A.D.)

222. Scholten, L.H., "De invloed van de zomer van 1947 op de vlinderwereld" (In Dutch). Entomol. Berichten, vol.12: pp.331-332. 1 Mar. 1949. Faunistic notes on the influence of that exceptionally warm summer upon Lepidoptera in the East of Holland. (A.D.)

223. Scholten, L.H., "Bijdrage tot de kennis van Arachnia levana L. en zijn verbreiding in ons land" (In Dutch). Entomol. Berichten, vol.12: pp.362-364. 1 May 1949. Notes on biology and distribution in Holland. This rare species spread in the years 1940-1945 over the province of South Limburg, where the larvae can be found on stinging nettle. (A.D.)

224. Scholten, L.H., "Vlindervangst op grassen die door Claviceps zijn aangetast" (In Dutch; English summary). Entomol. Berichten, vol.12: pp.393-397. 21 May 1949. In this interesting paper is described how great numbers of Lepidoptera are attracted at night by sweet secretion of flowering grasses attacked by Claviceps fungus. Gives lists of Macrolepidoptera observed on common grasses: Estuca arundinacea and Molinia coeralea infected by this fungus, in province of Guelderland, Holland. (A.D.)

225. Schuh, Joe & Don C. Mote, "Insect Pests of Nursery and Ornamental Trees and Shrubs in Oregon." Oreg. Agr. Exp. Sta. Bull. 449: 164 pp., 83 figs. Jan. 1948. Brief descriptions and biological notes for Oregon Lepidoptera on pp.54-97 and figs. 29-55. Includes 9 Rhopalocera, 9 Sphingidae, 4 Saturniidae, 5 Arctiidae, 13 other macros, 20 "Olethreutidae", 12 Aegeriidae, 34 other micros. (C.R.)

226. Sevastopulo, D.G., "Notes on four Indian Bombycid species." Proc. R. Ent. Soc. Lond. (A), vol.24: pp. 6-7. 15 Mar. 1949.

227. Sevastopulo, D.G., "Field Notes from East Africa." Entomologist, vol.82: pp.130-133. June 1949. Mostly on Lepidoptera (P.B.)

228. Stovell, T.H., "A new type of microscope-slide cabinet." Can. Ent., vol.81: pp.120-122, 2 figs. May 1949. Describes a cabinet in which a number of desirable features are incorporated, and gives full details for its construction. (C.dP.)

229. Toxopeus, L.J., "De 3e Archbold Expeditie naar Nieuw Guinea (1938-1939) en haar resultaten" (In Dutch). Tijdschr. voor Entomol., vol.91, Verslag: pp.XI-XIX. 1 May 1949. A summary of the author's address at the Intern. Entom. Congress at Stockholm. A short itinerary is given and zoogeographical results based on a study of the Rhopalocera. The author collected about 500 species, of which 50 are new. His results agree very well with those of recent ornithological and geological studies. New Guinea must have been formed out of a group of islands which were soldered together by strong rising of central mountainous region resulting in the Snow Mts. formation. The fauna of butterflies and birds in these previously isolated parts is strikingly different. The relatively young age of the Snow Mts., which view is supported by geological data, explains scanty fauna of Rhopalocera in that region. Several low valleys have been strongly uplifted in that rising process. This explains remarkable "low-land fauna" of such elevated regions as Baliem Valley and Wissel Lakes. (A.D.)

230. Toxopeus, L.J., "De samenstelling der Javaansche vlinderfauna" (In Dutch: The composition of the Lepidopterous fauna of Java). Tijdschr. voor Entomol., vol.91, Verslag: pp.LX-LXIII. 21 May 1949. Java is a land of problems and may not be regarded as a homogeneous zoogeographical unity with uniform fauna. On the basis of extensive studies of Roepke and of the author, especially of the fauna of alpine Rhopalocera, Toxopeus explains the Javanese fauna by accepting that the Island is formed out of about four parts: eastern, central, western and Mt. Muria (N. Central Java), which were isolated from each other for a long time. Besides, the influence of immigrants from neighboring regions is evident, e.g. the bridge over Mt. Muria and Bawaan I. in the Java Sea; this view is supported by the occurrence of certain Rhopalocera and deer in these regions. Another bridge must have run through S. Sumatra. This immigration must have taken place in three different periods, which is supported by the findings both of Javanese Rhopalocera and fossil and recent mammals. As an illustration is chosen the occurrence in Java of three subspecies of Adolias dirtea F. (Nymphal.), viz. javana, boisduvali, and roepkei, the last described as new. (A.D.)

231. Viette, P., "Les Lépidoptères Gelechiidae du Pacifique Sud" (In French). Bull. Mus. Nat. Hist. Nat., vol.21: pp.98-104. Jan. 1949. Gives a key to the genera occurring in the South Pacific and a synopsis of the known species. (P.B.)

232. Viette, P., "Contribution à l'étude des Micropterygidae, 3e note; Description de deux espèces nouvelles de Micropteryx (Lepid.)." (In French). Rev. Franç. Ent., vol.16: pp.50-51, 3 figs. 1 April 1949. Describes as new: Micropteryx jeanneli (Albania); M. rebeli (Portugal). ♂ genitalia of jeanneli and wing patterns of both are figured. (P.B.)

233. Viette, P., "Contribution à l'étude des Hepialidae, 4e note; Description de deux nouveaux genres sudamericains (Lepid.)" (In French). Rev. Franç. Ent., vol.16: pp.52-55, 9 figs. 1 April 1949. Describes as new DRUCEIELLA (type D. momus) and PARAPIELUS (type P. luteicornis). The type species and a third, D. metellus, are redescribed and characters of the palps, genitalia and abdominal sclerites are figured. (P.B.)

Erratum: In Recent Literature abstract #188 (Lep. News 3: p.70) strike out "genitalia not mentioned". Mr. Sperry discusses the genitalia in some detail and I extend my sincere apologies to him for my error. C.L.R.

NOTICES BY MEMBERS

SPANISH LEPIDOPTERA for sale or exchange. Want American, Indo-Australian, etc. Rhopalocera and Macroheterocera. H. Flores & J. Vives, 17 Plaza Lesseps, Barcelona, SPAIN.

Wanted: Papilionidae of world, especially Archon, Hypermnestra, Zerynthia, Baronia and Eurycus. Have for exchange many species of Japanese Rhopalocera. Yoshio Okada, Yanagida-cho, Saga, Kyoto, JAPAN.

Speyeria diana (males only) for sale or will exchange for tropical Lepidoptera or Coleoptera. Fresh stock, perfect and caught this season. Theodore Bock, 70 Ehrman Ave., Cincinnati 20, Ohio.

For sale: ECUADORIAN BUTTERFLIES from both slopes of Andes, collected by William Clark-Macintyre. Prices PER 100 for average material as follows:

Papilio - $15.00; Pieridae - $6.00; Ithomidae - $6.00; Heliconiidae - $8.00; Satyridae - $7.00; Nymphalidae, common - $6.00; Nymphalidae, uncommon - $12.00; Lycaenidae & Erycinidae, common - $7.00; Hesperiidae - $5.00.

Rarer material such as Morpho, Caligo, Brassolis, and material selected by genus or species - prices on application. Send for recent price lists. Advise me of your wants. F. Martin Brown, Fountain Valley School, Colorado Springs, Colo.

Jorge Kesselring, Caixa Postal 6, João Pessoa (Paraiba), BRAZIL, wishes to exchange, with U.S.A. members, Brazilian butterflies for his Lepidopterists' Society membership dues.

CALIFORNIA ACADEMY OF SCIENCES DRAWERS for sale. 17 x 19 x 2 1/2 inches, white lined composition bottom, double strength glass top, hand-rubbed clear lacquer finish, complete with hardware. $6.00 each, $65.00 doz. Cabinets available. Bio Metal Associates, P.O. Box 346, Beverly Hills, Calif.

Wanted: BASSWOOD MOUNTING STRIPS in all sizes. M.E. Cady, 21 Border St., Dedham, Mass.

A complete line of entomological equipment and specimens is now available: insect boxes, mounting boards, nets, pins, Rikers, etc., as well as hundreds of species of tropical and N.Am. Lepidoptera. Price lists sent free upon request. Robert G. Wind, Rt.145, Buena Vista, Livermore, Calif.

For sale or exchange - Kansas butterflies and moths, esp. Papilionidae, Pieridae, Nymphalidae, Hesperiidae; Heterocera: Sphingidae, Saturniidae, Arctiidae, Noctuidae, Catocalinae and Geometridae. Mounted or papered. William Howe, 822 E.11th St.,Ottawa, Kans.

Student entomologists collected in southern Arizona in August wish to contact persons who will purchase specimens and thus help cover expenses. The material will be named and prepared as desired. Rudolf Mattoni, Div. of Botany, Univ. of Calif., Los Angeles 24, Calif.

Butterflies of Florida, Georgia, and the Carolinas for exchange or sale. H.L. King, 419 Highland Ave. S.W., Roanoke, Va.

Duplicates for exchange - butterflies from European Alps, Pyrenees, Lapland, Mediterranean, Atlas Mts., N. Africa, Alberta. British moths, also local races British butterflies. Desiderata - many N. American spp., chiefly alpine, arctic, desert & Gulf States. Correspondence welcomed. Colin W. Wyatt, Cobbetts, Farnham, Surrey, ENGLAND.

Have few pairs of Argema mittrei from Madagascar for exchange for Papilio specimens, preferably of Africa or Australia. Have also beetles (Buprestidae and Cetonidae from Madagascar) in exchange for tropical butterflies.
A. Glanz, 289 E. 98th St., Brooklyn 12, New York.

Wanted: thirty thousand butterflies and moths from all over the world. Small or large lots. Ben Karp, 3148 Foothill Blvd., La Crescenta, Calif.

Wanted to buy: Dyar's "Classification of Lepidopterous Larvae"; Rothschild & Jordan's "A Revision of the Lepidopterous Family Sphingidae" (Nov. Zool., 1903); Scudder's "The Butterflies of New England". Peter Boone, R.F.D. 3, Box #172, Princeton, N.J.

For sale: The "Libra-Mount"; a double-Riker-type mount in Book Form. Ruggedly built. Send for descriptive leaflet. Will consider exchange for Macro-Rhopalocera from all parts of the world, especially Papilio, Morpho, Ornithoptera, etc.
Arthur Gatti, 63 W. 7th St., Mt. Vernon, N.Y.

Would like to exchange butterflies, large moths, and beetles of the world. Have many duplicates, including several thousand from tropics, with full data. Will be pleased to answer all correspondence. G.F. Schirmer, 2912 N. 45th St., Milwaukee 10, Wis.

Japanese moths offered in exchange for those of America and other countries,- especially Geometridae, Pyralidae, Sphingidae, and Noctuidae. Prof. Masao Azuma, Koyo High School, Imazu, Nishinomiya, Hyogo Pref., JAPAN, or 1644, Rinkeiji, Arima, Kobe, JAPAN.

LIVING MATERIAL

Limited number of cocoons of Platysamia euryalus, hybrid cecropia-euryalus, & columbia-cecropia offered in exchange for other living pupae, esp. Callosamia angulifera, Eupackardia calleta, Citheronia regalis. D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

Living cocoons of Indian Saturniid moths for sale. Please send U.S. Dept. Agric. importation permit with orders from U.S.A. (see Lep. News 3: p.13). Remittance must accompany orders.

Attacus edwardsii - 50¢; A. cynthia - 12¢; Actias selene - 20¢; Loepa katinka - 20¢; Saturnia grotei - 12¢; Antheraea mylitta - 40¢.

Himalayan Butterfly Co., Shillong, Khasi Hills, INDIA.

THE NEARCTIC BUTTERFLIES- Notice to Collaborators

On the 15th of September I sent out Data Sheets to all of you whose addresses I had. These sheets are for the first ten species of Satyridae listed in McDunnough's Check-list. I know that I missed some of you. In moving from one office to another in town and then moving all of my North American material out here to my home laboratory, things got very much mixed. If you have not received the above Data Sheets by the end of September PLEASE DROP ME A POST CARD and I will get yours off to you.

Forty-one percent of the collaborators to whom I wrote about the Danaidae replied with either positive or negative information. I hope that this will be raised considerably now that we are working on species that are not common!

Hereafter address all correspondence to me at:

Fountain Valley School, Colorado Springs, Colo.

F. Martin Brown, Coordinating Editor
"The Nearctic Butterflies"

DEALERS IN ENTOMOLOGICAL LITERATURE - SUPPLEMENT

The first list (see Lep. News 3: p.49) was received with considerable enthusiasm. Additions made known to us since then are as follows:

Dulau's Dept., B.H. Blackwell, Ltd., Broad St., Oxford, ENGLAND.

William Dawson & Sons, Ltd., London, ENGLAND. Very large stock; reasonable prices.

A. Asher & Co., 386 Herengracht, Amsterdam-C, NETHERLANDS. Large stock; prices reasonable.

Fred J. Pierce, Winthrop, Iowa, U.S.A.

Stechert-Hafner, Inc., 31 E. 10th St., New York 3, N.Y., U.S.A. Specializes in importing books.

John Johnson, P.O. Box 248, Mt. Vernon, N.Y., U.S.A. Occasional lists of papers.

Bernard Quaritch Ltd., 11 Grafton St., New Bond St., London, W.1, ENGLAND. Large stock; prices high.

The long-awaited "Revision of the North American Species of the Genus Eupithecia", by Dr. James H. McDunnough, has now been published and will be reviewed in the next issue of the Lep. News. It includes 145 species of Eupithecia alone!

The future library of the Lepidopterists' Society already has a number of reprints and volumes of journals. We acknowledge gratefully some recent acquisitions. Peter F. Bellinger has presented a fine bound copy, apparently the author's private copy, of J.W. Weidemeyer's "Catalogue of North American Butterflies" (1864). Through the intercession of Dr. A. Diakonoff, the authorities of the Zoölogisch Museum en Plantentuin, Buitenzorg, Java, have presented a set of the papers on Lepidoptera which have appeared in Treubia. Several Society members in many parts of the world have sent substantial sets of their own papers on Lepidoptera.

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The Annual List of Members of the Lepidopterists' Society is being mailed with the present issue of the Lep. News. It is complete as of October 25th and is timed to be distributed as the main exchange season begins. It will greatly aid the Society if members will glance through the List and drop a note to each correspondent not yet a member or send us a list of their names and addresses.

Participation in the North American field season summary for 1949 is earnestly solicited from all collectors on the continent who were in the field during the year. Dr. Munroe, coordinator for Area 7, wrote to the Lep. News editor of the response in his area for 1948: "I imagine that the other coordinators encountered the same difficulty that I did, namely, a reluctance on the part of collectors to believe that their own contributions to the summary might be important. I think part of this reluctance has been due to a mistaken belief that it is necessarily records of rarities or local 'specialties' that are likely to be of greatest interest. You know, of course, that the contrary is in fact the case, and that information relating to common species is not only most likely to be comparable from place to place and from year to year, but will also have the greatest statistical significance. There is the added consideration that common species are recognized by the beginner as well as by the expert, so that the range of observers is increased."

As usual, no numbers of the Lep. News are issued for July through September.

THE LEPIDOPTERISTS' NEWS
The monthly periodical of the Lepidopteriste' Society

Membership is open to all persons interested in any aspect of the study of butterflies and moths. The 1949 dues, including subscription to the NEWS, are $2.00 for Regular Membership and $4.00 or more for Sustaining Membership. Please make remittances payable to Charles L. Remington. Price for Vol. 2 is $2.00. No complete sets of Vol. 1 are available.

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APR 5 - 1950

The Lepidopterists' News

THE MONTHLY PERIODICAL OF THE LEPIDOPTERISTS' SOCIETY
c/o Osborn Zoological Laboratory, Yale University, New Haven 11, Connecticut, U.S.A.
Editor - C. L. REMINGTON • *Assoc. Editor* - J. E. REMINGTON

Volume III | November-December 1949 | Numbers 8-9

THE FIELD SEASON SUMMARY OF NORTH AMERICAN LEPIDOPTERA FOR 1949

The summary for the 1949 season is the most interesting compiled thus far, for several reasons. First, this was a year of great migrations. Second, the effects from the severe blizzards of the past winter could be examined to some degree. Third, an unparalleled summer drought in the northeastern region permitted an analysis of the early results of such a climatic condition. Finally, the reports prepared by individuals in the field totaled many more than ever before; 77 such reports, added to the observations of the 9 Area coordinators, give a significantly extensive coverage of North American field conditions. The progression of reports for the three years was: 1947 - 49(+5); 1948 - 54(+8); 1949 - 77(+9). More important than the improved numbers this year is the frequent presence of comparisons with other seasons.

1. MIGRATIONS

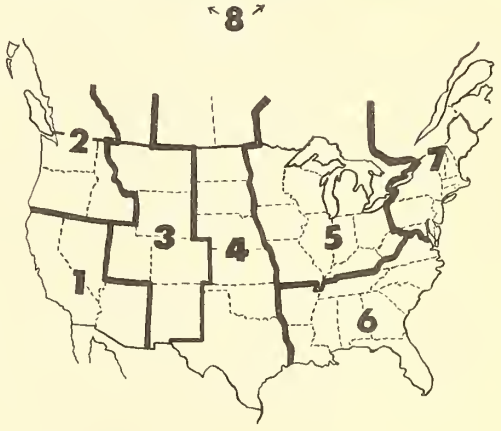
One of the largest-scale migrations of Vanessa cardui in the memory of living collectors characterized 1949. Sugden, Woodbury, and Gillette (1947) reported 1930, 1931, 1935, 1941, and 1945 as years of migration in Utah. Williams (1930) showed the early years of tremendous flights to have been 1865 and 1884 in the East and 1884, 1901, 1914, and 1924 in the West. If a periodicity exists, it is not readily seen in these data. However, there has certainly never before been reporting as extensive as that in the following summaries, and this accurate gauge may begin to show some form when a few more of these annual summaries have appeared. In 1949 great flights of V. cardui were seen in California, Utah, Colorado, Ontario, and northern Quebec. Very unusual abundance but no obvious migrations were reported for New Mexico, Washington, British Columbia, Saskatchewan, Missouri, Ohio, Connecticut, Massachusetts, New Hampshire, Maine, Quebec, and Newfoundland. Only in the southeastern States was there no great increase in numbers. A particularly remarkable phenomenon was the heavy southward flight of V. cardui in southern Ontario, reported by Henson.

This was a year of great abundance for Celerio lineata in California, and rather large numbers appeared in many western localities. Phlegethontius sextus in Illinois and P. 5-maculatus in Quebec were far more numerous than usual. Large migrating flights of Danaus plexippus were seen in Illinois, Michigan, Maryland, and Virginia, and of Phoebis sennae in Maryland and Alabama. This year no migratory activity was reported for Libytheana bachmanii, Nymphalis californica, or Neophasia menapia.

2. EXTREME WEATHER

Neither the blizzards which raged over the Northwest, the Great Basin, and the Great Plains last winter nor the record-breaking drought which worried the Northeast had any very noticeable effects on the Lepidoptera. The few allusions to deleterious results of these weather events seem to the writer to indicate involuntary attempts to see effects, merely because one would expect them. Possibly some definite results of the drought in the East will be apparent during the 1950 season.

Div. Insects
U.S. Nat. Mus.



Map of Season Summary Zones

The 1949 season in the Southwest was apparently poor; however, the reporting was so scanty (weakest response in the three years) that the situation is obscure except for the southern California coast and the Santa Rita Mts. All other Areas had their best response this year and all reported rather average conditions. The coverage for the Central and Northeast was excellent, and for the southern part of the Rocky Mts. it was very good. States entirely absent this year were Idaho, Montana, the Dakotas, Nebraska, Iowa, Arkansas, Louisiana, Mississippi, Tennessee, West Virginia, Delaware, and Rhode Island. Reports from Canada were few but came from every Province (except P.E.I.).

C.L. Remington

APR 3 1950

by B.H. Weber, Burbank, California
and Lloyd M. Martin, Los Angeles, California

CALIFORNIA

The 1949 year was another of our unseasonal ones in southern California. In the late fall of 1948 there were early rains followed by a hard freeze, as low as 19° F. in the San Fernando Valley. Then, of all things, SNOW from the Pacific Ocean east to the desert. All elevations above 5,000 feet had snow until April. This led us to believe that a good spring season was due. However, on the desert a drying wind developed and this, combined with a lack of the usual spring rains, ruined the spring collecting in the coastal areas from Santa Ana in the south to Santa Barbara in the north and from Santa Monica in the west to the Mojave in the east. All the best collecting was done in the outlying areas. The summer collecting was generally poor. The season was delayed from one to three weeks in the high elevations and from no lag to one week in the low areas. This was one year when you had to be in the exact area at a specific time to get good collecting. This required weekly excursions and diligent searching; the butterflies were out in good numbers when one found them, but the finding was the hard part.

SAN DIEGO REGION. Thorne's report for this area is so thorough that it is given here almost unmodified. In spite of an unusually cold winter, the 1949 season was not much later than normal. Euphydryas editha was abundant by March 10, which corresponds with previous peak records from March 9 to 18. In exceptional years it flies in February. Philotes sonorensis flew in March, somewhat later than normal. Worn females were still on the wing March 30 in coastal areas. E. chalcedona appeared on April 10, about normal. Speyeria coronis males were taken June 19 in the Lagunas, about average. Normal rainfall more than offset the effects of cold and most nymphalids were well above average in abundance. Sample counts of larvae on Plantago in a good colony of E. editha on February 16 at Otay showed 28 and 29 on two measured square yards. This would represent a population as high as 140,000 larvae per acre, but, of course, the caterpillars were not continuous over such an area. Over 1000 eggs of Euphydryas chalcedona (very conservative estimate) were taken from a single Scrophularia californica plant on May 22. Larvae of Chlosyne californica were present by the hundreds on June 15. Melitaea leanira was the most abundant I have ever seen it here. They appeared May 7, then again June 18, indicating a double brood. During the emergence period of Speyeria callippe, we had 0.80 inches of rain which came as a drizzle for a whole week. This had no effect on the emergence. Nathalis iole, relatively rare here, was seen from one end of the county to the other and was numerous on June 15. Lycaenids were below normal, especially the Theclini, although Tharsalea hermes was as abundant as it was in the early 1930s. A single egg of this species hatched on March 16 under field conditions; mature larvae were found May 24. Phoebis sennae was the only species adversely affected by the cold winter. Agraulis vanillae was still on the wing December 6.

Briefly summarized, the winter was unusually cold but emergences were delayed only a few days. There were practically no adverse effects from temperatures below freezing. Normal rainfall encouraged most Nymphalidae and Papilionoidea, but Lycaenidae and Hesperiidae were below normal.

MOJAVE, COLORADO, AND BORREGO DESERT REGION. In general these outlying areas were above normal due to the heavy snowfall and rain early in the season, in the vicinity of Palm Springs and Twenty-Nine Palms. Thorne wrote: "Due to unusual rains in the desert, one of the best wild flower displays in years occurred. Vanessa cardui and Celerio lineata larvae appeared in immense numbers and cardui adults to the extent of 2 or 3 thousand were seen on one patch of damp sand at Little Borrego on April 12. This was not a migration, since they were breeding there. Later on, these may have migrated, since every shady spot that afternoon had 20 or 30 Painted Ladies and pressure of population must have been terrific." Near Palmdale and Little Rock, the Mojave suffered from the dry winds and was almost sterile by collecting standards. In early April Parker found Apodemia mormo, Callophrys dumetorum, and Vanessa cardui abundant, but the many other usual species were far below normal. Whitman took Chlosyne lacinia in the Borrego and Friday took numbers of Melitaea chara in the Palm Springs area in March. All over the desert areas Vanessa cardui were swarming. Nathalis iole and Eurema nicippe were very common. Weber took great numbers of Anthocharis cethura, Pieris sisymbrii, and Papilio rudkini in the Twenty-Nine Palms area in mid-March. A. cethura was common in the Providence Mountains just north of Essex near the Nevada line, as was rudkini in mid-April, three weeks later than usual. Euchloe creusa was scarce in comparison with 1948. Evans and Parker found Philotes sonorensis much more abundant at Azusa than in 1948. Miller noted incredible numbers of Colias eurytheme near Blyth September 18.

SOUTH-CENTRAL COASTAL REGION. May and early June were cloudy and rainy in the Santa Barbara to Santa Cruz areas, but the author found two new colonies of Speyeria egleis near King City; Zerene eurydice was common here at that time. A few of the rare Papilio indra pergamus were taken in the Banning area in late June and in May on the Mt. Wilson road, where they were feeding on roadside thistle. Parker reported Euphydryas chalcedona, Strymon saepium, Plebeius acmon, Papilio rutulus, and P. eurymedon extremely numerous in the Malibu Hills June 5; at the same time he found Tharsalea arota, Limenitis bredowii, Speyeria callippe, Melitaea leanira, M. gabbii, Phyciodes mylitta, and Anthocharis sara numerous as usual. In Los Angeles S. saepium, S. adenostomatis, S. melinus, A. mormo, Lycaenopsis pseudargiolus, and Ochlodes nemorum were common in June. On the Ridge Route T. arota, P. acmon, P. melissa, Minois silvestris, S. callippe, and S. coronis were numerous. But at 7000', in the San Bernardino Mts., August 10, butterflies were below average numbers, only Zerene eurydice appearing in fair abundance.

No reports were received from the central valleys, the San Francisco region, the High Sierras, or northern California.

FIELD SEASON SUMMARY 1. SOUTHWEST - cont.

NEVADA

Speyeria coronis (all ♂♂) was just emerging on Mt. Charleston on July 4. Papilio rutulus was common, as were Plebeius icarioides and Coenonympha ochracea. Limenitis weidemeyerii nevadae was in much better condition than at the same time in 1948 indicating that they were slightly later this year.

ARIZONA

The early July rains in southern Arizona brought excellent results for the collectors from southern California who ventured into the old collecting territory of several early entomologists.

On July 2 the Prestons and Weber found the Flagstaff area very wet; there was good collecting in Oak Canyon between the showers. Speyeria atlantis was rare at this time, although the conditions indicated its season was ending. Minois alope was common in an apple orchard. The rainy season was three weeks early this year and started June 26.

The White Mountains were almost duds this year. Not a Speyeria was seen July 6, but Coenonympha ochracea and Colias alexandra were common at this time.

Both butterflies and moths were out in numbers by July 30. Kricogonia lyside was very plentiful, feeding upon Mesquite blossoms from Covered Wells to the Baboquavari Mts. In Elkhorn Ranch Canyon on the east side of the Baboquavaris, Papilio cresphontes was seen in numbers, as were P. philenor, Eurema mexicana, E. boisduvaliana, Danaus berenice, Asterocampa celtis, A. leilia, A. clyton, Apyrrothrix araxes, and Antigonus pulverulenta. One ♀ Papilio lycophron pallas was caught, the second record of this species in the United States (Freeman recorded one from Brownsville, Texas). Three ♂♂ were seen but were impossible to get; they resemble philenor in flight and were flying very high.

From August 13 to 28, in Madera Canyon, Santa Rita Mts., the moths and butterflies were out in good numbers. Reid took a Megathymus ursus and a Xylophanes falco along with many other rare species. Ford took Papilio multicaudata, P. philenor, Eurema gundlachia, E. proterpia, E. nicippe, E. boisduvaliana, Mestra amymone, Melitaea thekla, Limenitis astyanax, L. archippus, L. bredowii, Vanessa cardui, Libytheana bachmanii, Chioides albofasciatus, Urbanus dorantes, Atlides halesus, Strymon columella, and several others. Dickson also took a Heliconius charithonia. Gyrocheilus tritonia was very common the first week in September. The moths in Madera Canyon were not as plentiful as in seasons past. However, many good things were taken. Syntomeida hampsonii, Bertholdia trigona, Antaplaga comstocki, and Miracavera brillians were taken sparingly, whereas Lythrodes radiatus, Chrysoecia scira, Grotella soror, and B. binda were commoner than before. Several wings of Eacles imperialis were found in a mine tunnel where bats had brought the moths to feed upon them. No imperialis have been taken in the past.

The collecting season had been about two weeks early, due to the rains that started in the first week of July and continued to August 11. During a two weeks' stay we had only one good rain, of about 0.75 inch in 15 minutes at 6,000 ft. elevation. In early September the rains started again and continued through the month. Thorne found the Canyon poor Oct.17-21, a rainstorm on the 16th apparently terminating the season abruptly.

In these desert islands (as we call these mountain ranges that are surrounded by desert) many plants occur that are of a tropical nature, and are kept alive by the heavy summer rains. This in turn produces a vast amount of insects that emerge during or just at the close of the rains. So far, from this one canyon alone we have recorded over 100 species of butterflies and close to 600 species of moths, with many hundreds of species of moths yet to mount and determine.

Around Yuma, March 19-20, only Vanessa cardui and Pieris protodice were found.

Contributors: J.L. Creelman; W.H. Evans; R.J. Ford; G.F. Miller; D.E. Parker; F.T. Thorne.

2. NORTHWEST- OREGON, WASHINGTON, IDAHO, BRITISH COLUMBIA

by John C. Hopfinger
Brewster, Washington

OREGON

From Oregon we have the detailed report of Prof. Macy, of Portland. "There was a cold winter in Oregon which froze petunias and geraniums which stay out without injury in the Willamette valley some years. There was some snow. It appeared that a late spring was in the making and early growth was retarded but a very warm two weeks at the end of February and favorable weather later produced emergence of late spring species as much as three weeks early. Toads bred a full month ahead of time in the high Cascade lakes, observed by the writer and substantiated by the Biologists of the State Game Commission. Altogether the weather was excellent with very moderate amount of rain in the spring, and as usual, almost none in the summer. Not as much cloudiness as usual during the butterfly season."

"Very few Papilio zelicaon were seen, believed to be a reduction in population. P. rutulus and P. eurymedon were in good numbers in mountains of both northern and southern Oregon. In the Siskiyou Mts. of southern Oregon both species were abundant but ragged by the 3rd of July." Parnassius clodius (late May) and Euchloe sara were in usual abundance

in the Cascade Mts. near Portland. Colias eurytheme was very scarce in the Willamette valley as usual. C. chrysomelas in good condition were caught in 2 days of collecting in the mountains of southern Oregon. The first Danaus plexippus in several years was seen flying slowly about in Willamette valley near McMinnville on May 17; it was worn and dull and may have been an arrival from the south. Another fresh specimen was seen in the same place in mid-July. Coenonympha ampelos was only moderately common in the northwestern Willamette valley. Although it seldom fluctuates much in population, it was down considerably from its peak year of 1947, when Macy caught about a hundred in four hours collecting. Three worn Oeneis nevadensis were taken in the mountains of southern Oregon on July 2 and 3; no others were seen during the year. Speyeria callippe, fresh in July at elevations of from 4000' to 6000', was locally abundant in eastern Oregon around Bend. S. hydaspe was abundant locally in the mountains of southern Oregon, and some were still fresh July 3 and 4. S. cybele leto was rare; only one was taken in eastern Oregon, and several in the coastal mts.; 3 females were caught in August, as the thistles began to bloom. Boloria epithore was found in abundance in one locality in the coastal mts., in early May, just emerging. Euphydryas colon was rather abundant in swampy areas near Cascade Lakes. E. nubigena occurred in less numbers than colon at Davis Lake, central Oregon. Melitaea hoffmanni was fairly common at one place in the mountains of southern Oregon at around 4500'; most were worn by early July. Nymphalis californica was scarce; only two were caught in the Cascades, and none were seen elsewhere. One N. milberti was seen and one fresh N. antiopa was caught in early July. Neither was seen west of the Cascades. Two Vanessa atalanta were seen near McMinnville; none elsewhere. V. cardui was abundant everywhere and was a nuisance in collecting. The larvae were abundant on thistle. The first, worn specimens appeared at McMinnville on May 13. No adults or larvae of V. carye were seen. As usual, Limenitis lorquini was generally not common in northern Oregon. It was found in some numbers in one swamp in the mountains of southern Oregon. Only two Lycaena mariposa were caught, near Black Butte in the Cascades. L. helloides and L. editha were fairly common in parts of eastern Oregon. Plebeius anna was locally abundant in swamps in south and eastern Oregon. P. saepiolus was in very moderate abundance. Only a few P. acmon were seen. The former has disappeared from its former haunts in places in the eastern foothills of the coastal mts., perhaps due to heavy sheep grazing. Lycaenopsis pseudargiolus and Glaucopsyche lygdamus were abundant in early spring in the mountains. Nothing unusual in skippers was seen.

WASHINGTON

WALLA WALLA REGION. How the weather affected the moth population in southeastern Washington is shown by the report from Cook, of Walla Walla. "The season of 1949 started with one of the most severe winters on record. The spring was rather late in starting, but most species of phalaenids were about on their usual schedule before June 1. Following the cold winter came an unusually dry spring and summer, which affected many multi-brooded species.

"Phalaenids more abundant this year than in 1948 included Euxoa olivia, sponsa, messoria, tessellata, atomaris; Agrotis venerabilis, Protogygia lagena, Scotogramma trifolii, Platyperigea extima, Heliothis phloxiphaga and Autographa brassicae. The Euxoas returned to at least normal abundance following the heavy reduction in 1948, and the first brood of P. extima was the heaviest I have captured. These species are all normally abundant in this area, and were not seriously affected by the cold winter or dry summer.

"Phalaenids definitely less abundant than normal included Euxoa septentrionalis, Feltia ducens, Rhyncagrotis exsertistigma, Lacinipolia stricta, L. rectilinea, Xylomiges curialis, Orthosia hibisci, Leucania farcta (of which the summer brood was greatly reduced), Septis cuculliformis, S. cinefacta, Oligia indirecta, Stibadium spumosum, Heliothis obsoleta, Schinia sexplagiata, Autographa californica and Hypena humuli. H. obsoleta, the corn earworm, was so nearly exterminated by the winter weather that no control measures were used around Walla Walla, and no reports of infested corn ears were received. Most of the species in this group are of more southern distribution or pass the winter as pupae or adults.

"A point of interest concerns the activities of Vanessa cardui in this area. The spring migration from the south was not particularly noticeable, but the following brood, which developed on Amsinckia in wheat fields, was very abundant, and the marching larvae caused considerable comment. This is not the normal host in this area, but the larvae were confined to this weed, and cleaned it out of many wheat fields. The following brood of butterflies was very abundant."

BREWSTER REGION. The winter of 1948-49 was very severe, with deep snows and temperatures well below zero for weeks at a time. The snow disappeared on the river levels about the middle of March, and the first moths showed up at light on March 19. About the middle of April, right on time, the first butterflies were out. Callophrys sheridani, always scarce, showed in some numbers, 5 being taken the first day out. Several C. affinis, and 2 Papilio zelicaon also were found at that date. Late in April it turned cold, and a hard frost killed tomato plants. May 5, along the Columbia 3 P. indra were seen.

In greater numbers than for many years were: Callophrys affinis; Euchloe ausonides, Euphydryas anicia; Mitoura spinetorum (mid-May); Phyciodes mylitta; and the Catocala spp. About average were: Papilio daunus; Euchloe creusa; Phaedrotes piasus; Glaucopsyche lygdamus; Plebeius acmon; P. montis; P. melissa (♂ early June at Alta Lake); Lycaena heteronea (ditto); L. helloides; Minois oetus (pale arid form); Coenonympha elko; Erebia epipsodea (mid-June at 5000'); Boloria epithore (ditto); Polygonia spp. & Nymphalis milberti (ditto, hibernators); Strymon saepium, titus, and acadica in late June (Alta Lake); Speyeria cybele leto, zerene, coronis (along Methow River in early July); S. hydaspe; S. mormonia (July 30 - 2 weeks earlier than 1948); S. atlantis. Very much reduced this year were: Melitaea sterope; Minois paulus; M. baroni; Erebia vidleri; Oeneis chryxus; Colias interior; C. edwardsii; Polygonia spp. Oeneis nevadensis was absent this year as expected;

FIELD SEASON SUMMARY 2. NORTHWEST - cont.

it swarms in alternate years and is due in 1950. Nymphalis californica is still at a low ebb after the outbreak of 3 years ago, when they swarmed all over the country. Papilio rutulus and P. eurymedon continued the downward trend of the last 5 years. P. oregonia, a D.D.T. victim, was fairly numerous in spring but almost absent in later broods. A long-tailed P. indra ("pergamus"), seen very rarely here, was taken at Alta Lake in late June. Pseudohazis larvae, usually abundant in greasewood, were absent.

Limenitis archippus was common here in 1914-21, but since 1921 I had seen exactly 3, a ♂ I took and 2 ♀♀ I left for seed. On Aug. 29 of 1949, my neighbor Galbraith brought me 5 ♀♀ and 2 ♂♂ all in good condition, taken right around his house. He also brought a ragged specimen at the same time which is either a melanic or a hybrid lorquini x archippus (lorquini is fairly common here).

Apparently new State records were Lycaena mariposa (10 taken in Ferry Co., July 7) and Polites themistocles (on my lawn).

PUGET SOUND REGION. From Seattle, Johnston, the famous collector of moths in all sizes, wrote: "On the whole, conditions were excellent. On two nights moths kept coming to the gasoline lanterns until daylight. Each time some 400 specimens were secured." Collections were made in eastern and western Washington and Oregon. "I have just started the job of mounting the summer's take, so cannot give details as to the species taken, dates secured, etc., as there are about 10,000 specimens of butterflies, macros, and micros to handle. I will be lucky to get it done by the time next year's collecting starts."

From that tireless collector, Frechin of Bremerton, comes the following: "Weather conditions apparently played an important part in the comparatively excellent collecting conditions in the early spring, and the very poor collecting encountered in the summer and autumn. A very dry period extending from late spring well into summer had a pronounced effect on the number of butterflies found." The following species were found in numbers well above normal: Anthocharis sara; Boloria epithore; Strymon melinus; Incisalia iroides; Proteides clarus; Thorybes pylades; Pyrgus ruralis; Erynnis persius; E. propertius; Carterocephalus palaemon; Ochlodes sylvanoides; Polites sonora; Atrytone ruricola; Papilio rutulus; and P. eurymedon. Incisalia polios had the best season I have ever recorded. Euphydryas editha, as usual, appeared by the thousands on Tenino Prairie.

The following species appeared in very small numbers: Colias occidentalis; Parnassius clodius; Pieris napi; Minois alope; Phyciodes mylitta; P. campestris; all Polygonia; Nymphalis californica; N. milberti; Plebeius icarioides; and Mitoura nelsoni. Several species were not even seen, including Papilio zelicaon, Neophasia menapia, Euphydryas colon, Nymphalis antiopa, Mitoura johnsoni, Polites mardon, Strymon titus. Speyeria cybele was almost nonexistent at the type district; logging operations are probably prime factors in this scarcity. Notable captures and new records for western Washington include the following: Speyeria zerene; Hesperia hulbirti (one taken at sea level); H. harpalus and Amblyscirtes vialis (Mason Co.); Hesperia juba (one near Camp Spelman); Erynnis propertius (common after many years' absence). All other diurnals endemic to the Puget Basin appeared in normal numbers. Moth collecting was very good. Several Platysamia euryalus ♂♂ were taken, using cecropia ♀♀ as an attractant. Smerinthus cerisyi had a very good year. A colony of Hemaris diffinis was found in Mason County. Pseudohazis "eglanterina", usually rare, appeared in moderate numbers.

The islands of Puget Sound are of great interest to the collector, and we have a report from Mrs. Henriksen of Orcas Island. She found that collecting began about the usual time, on April 14 with the first Incisalia eryphon and Strymon melinus of the season, both very scarce. More plentiful than last year were: Phyciodes mylitta; Speyeria hydaspe; Vanessa cardui; and Platysamia euryalus (30 at light). Much reduced from 1948 were: Speyeria zerene; Nymphalis milberti; Vanessa carye (swarmed in '47 and '48); V. atalanta (absent); Limenitis lorquini; Parnassius clodius; Oeneis nevadensis (none found); Neophasia menapia (still declining); Arctia caia; White Satin Moth (millions on silver maples in '47 and '48; none in '49). About as usual were: Papilio rutulus and eurymedon (abundant); P. zelicaon (rare); Incisalia iroides (scarce); Coenonympha ampelos (common); Anthocharis sara (common); the Blues (not common); Polygonia spp. (numerous); Nymphalis antiopa (ditto); Pseudohazis "eglanterina" (very abundant); Hemaris diffinis (common); Smerinthus cerisyi (ditto). One Catocala relicta (Sept.14: Mt. Vernon) and a Celerio intermedia were taken. Only 3 C. lineata were taken in 2 years.

BRITISH COLUMBIA

Vancouver Island has many interesting species, and we are fortunate to have Guppy, of Wellington, to tell us about his experiences in that locality. He says: "Except for Sphingidae the season was better than average. Extreme earliness of all species, both moths and butterflies, was noticeable. A few specific dates recorded follow, with '48 dates in parentheses: Lycaena helloides May 17 (about June 1); Limenitis lorquini May 30 (June 20); Speyeria zerene June 18 (June 26); Minois alope July 3 (about Aug. 1). Weather conditions: the winter was very unusual. Cold dry weather prevailed from late December until about February 20. This is in contrast to the usual Pacific winter in which mild wet weather predominates. After February 20, the weather improved with extreme rapidity. Spring was early, dry and warm. The summer was cooler and wetter than normal, but better than '48."

"Following are most noticeable changes in butterfly populations. Papilio rutulus and P. eurymedon continue plentiful. Rutulus most particularly is increasing in numbers. In '47 eurymedon was by far the most plentiful. Last year both species were seen in about equal numbers. During '49 rutulus easily outnumbered eurymedon." A fair number of P. zelicaon (hitherto nearly absent) were seen

here in fresh condition, though on the west coast of the Island it appears much commoner than rutulus or eurymedon. Parnassius clodius showed extraordinary increase in numbers; during 1949 it abounded everywhere. Neophasia menapia, as recorded in the last Summary, is slowly coming back after nearly disappearing; in 1949 several specimens were taken, the first since 1945. After being sparsely common in 1948, Oeneis nevadensis vanished again; as far as Rhopalocera were concerned, this was the only disappointing feature of a satisfactory season. Boloria epithore shows exactly the same trend as Parnassius. Polygonia satyrus was common as usual; P. oreas showed a marked increase; P. faunus and P. zephyrus were found to be common in the mountains, where it may have been so all along.

Vanessa cardui was probably the most noteworthy feature of the 1949 season. It appeared in large numbers in the late spring (all worn specimens). They were definitely not here in the fall of 1948, and Guppy had seldom seen this species here before. Reproduction was evidently very successful, the webs of the larvae on thistles were noticed on all collecting trips. The new generation appeared in late July and fresh specimens were common during the remainder of the season.

Hesperiidae appeared on the increase. In particular, Erynnis propertius, P. persius, and Pyrgus ruralis were seen and taken frequently. Two specimens of Carterocephalus palaemon were taken. These appear to have wandered north of their usual haunts and are not common anywhere on the Island.

Sphingidae were a failure. The Celerios I have not seen for years. Hemaris diffinis, usually common, was scarce. Smerinthus cerisyi, abundant last year, fell off badly. Telea polyphemus is still on the increase, though not common. Two Platysamia were taken, the first seen in many years. The usual common species, Isia isabella, Halisidota maculata, Hyphantria textor, and Diacrisia virginica, continue abundant, the last named nearly reaching pest proportions. Halisidota argentata, usually common, was scarce. Phalaenidae were also plentiful, especially early species. Noticeable in April were Dargida procincta, Epicnaptera americana, Behrensia conchiformis, Acerra normalis; Xylena curvimacula has increased and completely replaced X. cineritia and X. nupera, which were at one time more common. Of the later moths, Autographa ampla and A. corrusca have increased at the expense of A. californica, which were plentiful during 1948.

No report was received from Idaho.

Contributors: A. Anderson; W.C. Cook; D.P. Frechin; R. Guppy; Mrs. Emily Henriksen; E.C. Johnston; R.W. Macy.

3. ROCKY MOUNTAINS - NEW MEXICO, UTAH, TO ALBERTA

by J. Donald Eff
Boulder, Colorado

In considering a summary for this area, strung out as it is along the backbone of the Rockies, one must reflect not only upon the diversity of the terrain included, but also upon the wide range of botanical relationship to the various species and upon the constant changes in weather and their immediate effect upon the cycles of the various species. In this, the third report for this Area, it has already become apparent that the over-all Lepidoptera conditions have been, and probably will continue to be, exceedingly spotty. Collectors who have lived and collected in the mountains realize the difference in weather possible in different localities only a few miles apart, such as on the east and west sides of a mountain range or in adjacent valleys. This checker-boarding of similar mountain localities, with sufficient rainfall in some spots while others suffer from lack of it, seems to bear a direct relationship from year to year with the quantity and variety of species found in any one collecting area.

Most readers will recall the severe blizzards and winter of 1948-49 that hit hard at western Nebraska, Nevada, Utah, and Colcrado. This apparently was a factor in collecting conditions for 1949 and may be the reason that the papilioes from northern Wyoming seemed to run smaller in size than is usual. However, there were many places in this area where collecting was excellent or at least improved. Spring species arrived about on time, even a few days early in a couple of places, and in the main collecting was excellent. Standard, in New Mexico, reports a wet summer, but Colorado had its rainfall in early June, followed by a dry summer and an even drier fall season featuring beautiful days and lasted long enough to produce the oddity of people picnicking in the mountains on New Year's Day, certainly unusual here on the "Rooftop of the Nation".

In an Area like this, which is chiefly rugged terrain, human factors play but little part in the lives of Lepidoptera, as compared with orchard regions where DDT has entered the picture. Montana suffered somewhat from forest fires, but the rest of the Area had better luck. Locally, an explosion has set fire to, and may wipe out a huge peat bog at Caribou, a newly found and apparently excellent collecting spot. Overcollecting seems to have reduced seriously the numbers of Boloria frigga on the famous Tolland Bog.

From all points in this Area come reports to coincide with those from other regions relative to the great abundance of Vanessa cardui and Celerio lineata; and Danaus plexippus, usually a rather uncommon sight throughout the Rockies, has been observed in greatly increased numbers.

Here, the bulk of the V. cardui were observed in April, although still abundant at higher altitudes, including the alpine zone, at later dates. On the 28th of April Gordon Snow, a local resident, called Dr. Hugo Rodeck at the University of Colcrado Museum

FIELD SEASON SUMMARY 3. ROCKY MTS. - cont.

about apparent migrations of this insect. Unfortunately neither Dr. Rodeck nor I was able to get there at the time to observe the actions, but Snow noted that at approximately 2:10 p.m. that day one swarm about 10 feet wide and 30 feet long and about 3 feet thick went by, flying rather close to the ground between houses, and heading south directly into the wind. The flock maintained its formation quite well. At 2:30 p.m. another and larger group, approximately 50 feet square, was observed, and thereafter many smaller groups until shortly after 3 p.m. when a stronger wind sprang up and put an end to the flights. I went over to observe shortly after 4 p.m. and the place was covered with thousands of specimens, but flying here and there with no apparent purpose. Minor, in western Colorado, in a splendidly written report, observed that the same was true in Grand Valley. His observations were over a longer period of time, planned to determine if they were migrants, but he could reach no definite conclusion. To use his words: "Some days they would flutter leisurely about the flowers and bushes, flitting about in all directions and going nowhere in particular. On other days great swarms of them would wing swiftly past, flying just a few inches above the ground, coming from the south-east and heading north-west. On still other days the direction would be reversed. The fact that the Colorado River flows through the Grand Valley roughly from south-east to north-west, and that the air currents generally follow the course of the river, may have something to do with the direction of the flights." One thing on which all who reported the excessive abundance of V. cardui agree is the fact that the greatest number appeared during April, reached their peak by the last of the month or the first week of May, and from then on declined somewhat in number.

Celerio lineata, while not approaching the numbers of cardui, was very common and quite evenly distributed.

In ALBERTA, Bowman, the only collector from that area, was handicapped by illness. However, a terrific storm apparently played havoc with Lepidoptera the last of July as almost nothing appeared in August. This was followed by a severe frost the first of September. He found it the worst year he has ever experienced.

No definite records for MONTANA were received.

In WYOMING, Downey reported the season slightly ahead of an average year. He found the Papilios of smaller size than usual. His observations with regard to D. plexippus and C. lineata agreed well with those of the others. Also he noted that the Catocalas were not as plentiful as usual, and that the same was true of the Speyerias. Glasgow reported that what little collecting he did seemed to indicate a very poor season around Daniel.

The only records of UTAH Lepidoptera were from Lauck who travelled the length of the State by auto during the last two weeks of June. He believes that much of his poor collecting may be attributed to the late opening of the season, a result of the extremely cold winter. He reported the collecting fair at Bryce Canyon, especially for Pieris, Phyciodes, Melitaea, and Anthocharis, and very poor at Zion Canyon where things were dry. Snow prevented collecting, except of swarms of Vanessa cardui, in the Kaibab Forest on the North Rim of the Grand Canyon, but enroute to the South Rim, at the border of the Kaibab, he found Minois meadii plentiful.

In COLORADO, Rodeck collected again in the Dinosaur National Park in the N.W. corner of the State. He found that area experienced a good spring and then a dry summer and this resulted in an advancement of the periods of flight of practically all species. Minois oetus was probably the commonest species, and a few more Papilio brucei were taken than last year. On the Western Slope, in the vicinity of Fruita, Minor reported butterflies in normal numbers, with a few slightly more common than usual and Papilio indra, P. daunus, Parnassius smintheus, Oeneis chryxus, Neonympha henshawi, and Megathymus yuccae absent. Lauck reported collecting at Mesa Verde in the S.W. corner of Colorado very good on July 1 with Colias alexandra, Limenitis weidemeyerii, and the Blues plentiful. It appeared that the collecting on the Western Slope was somewhat better than that on the Eastern Slope. The 3 Remingtons and I found good collecting on the Western Slope at Rabbit Ears Pass near Steamboat Springs, the middle of July. P.S. and I did note a considerable decrease in the Speyeria which abounded last year. Also Euphydryas anicia was not found, but this was offset by an increase in other species. In the south-central part of the State, Rotger enjoyed good collecting and made several discoveries. He found Minois meadii plentiful near Sanford. He also reported Speyeria as being scarcer. Along the Front Range of the Eastern Slope, Brown at the southern end near Colorado Springs, and I near the northern end, had good spring collecting, with the Theclini being particularly abundant. Summer collecting was rather spotty, with the alpine species in particular running from 1 to 4 weeks late and being generally fewer in numbers than usual. Not much is known about the eastern Colorado prairies, although the Remingtons stopped near Limon in late July and found Phyciodes picta common and fresh. Stallings reported Megathymus streckeri just emerging in S.E. Colorado on May 31 at 5000 feet and apparently flights of all species average.

This year NEW MEXICO has a little representation and we hope for more in the future. Standard writes from Belen that they had a wet summer and better collecting than in 1948, with notable increases in D. plexippus, V. cardui, Polygonia interrogationis, V. atalanta, C. lineata, Limenitis, and Papilio, and Pieris and Colias about normal. Stallings was in N.E. New Mexico from May 23 to June 1, collecting principally Megathymus, but he took two Yvretta rhesus. They found M. streckeri flying at Santa Fe (7200') May 25 in good numbers. By May 27, it was beginning to show wear at Albuquerque at an altitude of 5200'.

COMPARISONS WITH OTHER SEASONS

Most species of Papilio occurred in approximately usual numbers, with P. daunus showing a decrease. Minor notes that Papilio indra minori seems to be increasing in numbers and range and apparently is gradually replacing the parent form of indra. C.L. Remington notes that Papilio brucei, absent in '34 and '41, and fairly common (for this species) in '37 and '47 around the middle of July, was more numerous this year, but after July 20. Parnassius seemed to be their usual abundant selves in most of the lower areas, but the alpine forms in some areas seemed to be entirely missing, with Mt. Evans the most notable example. Neophasia menapia did a swan dive after being very numerous in 1948. Pieris napi was very common as usual. Anthocharis sara was scarce again this year. Two years ago it was common. E. ausonides appeared in much reduced numbers, although larvae were common and occasionally parasitized by ichneumon wasps. Nathalis iole appears to be coming back somewhat after a complete wash-out last year; Rotger took some in southern Colorado and New Mexico and the Remingtons took fresh specimens at 10,000' in the mountains July 12-13. Here in Boulder and vicinity at 5300' I found them as late as the first week in November. Most of the Colias were about normal, with meadii showing a drop and alexandra being more plentiful than usual in the south, and scarcer in the Pikes Peak region. Coenonympha ochracea was common again. Brown found Eumenis dionysius fairly common in the Big Horn Mts. of Wyoming. Most of the Minois were about the same, with meadii apparently the only one to show an increase. In the Oeneis, uhleri was the big ground-gainer, with good catches reported throughout Colorado. O. chryxus seemed to be nearly absent. C.L. Remington notes that O. lucilla swarmed on Mt. Evans July 15, 1937, and was plentiful again in '47, but rather scarce in '48. This year on July 15 we found only a few specimens on Berthoud Pass (11,300'), and Charles, Jeanne, and P.S. found one female on Mt. Evans July 21. However, on August 7 at the same locality I caught 13 ♂♂ and 11 ♀♀ on a rather poor collecting day, and all specimens were fresh. Oeneis brucei is another that had been plentiful on Mt. Evans in '37 during the middle of July. On our return on July 16 from the Rabbit Ears Range we found a colony of them on Berthoud Pass, where we had not found them on several previous years. On August 7 I took some 30 specimens on Mt. Evans at a slightly higher elevation; their condition indicated that they had been flying about a week. Of the Erebias, epipsodea was plentiful, magdalena about normal or slightly increased, callias about normal (at least in southern Colorado), and ethela, which you can normally expect to appear by July 23, did not reach full flight until August 4. With the exception of callippe, Speyeria showed at least a small decrease from 1948 levels in all areas. Boloria aphirape was the most abundant Boloria, with the rest of the genus holding their own. In Boulder County all of the Checkerspots decreased in quantity, with Melitaea arachne being nearly absent; only one specimen was taken near Nederland, where two years ago they swarmed. However, in Mesa County, Minor found M. acastus and Euphydryas anicia much more common than usual. In Phyciodes it was gorgone "as usual", with barnesii showing the biggest drop in some localities. Polygonia seem to be staging a comeback. Limenitis weidemeyerii, Vanessa atalanta, and Nymphalis milbertii were commoner than usual. Larvae of the latter two were heavily parasitized by larvaevorid flies. In the Theclini, Strymon californica, S. saepium, and Mitoura spinetorum surged slightly. Strymon liparops was found near Boulder. Incisalia schryverii and eryphon increase considerably. Lycaena snowii was perhaps more numerous than heretofore and the same was true of heteronea and nivalis. Brown found editha abundant on August 24 at Towgowtee Pass, in Wyoming. In the Blues, Plebeius minnehaha was scarce and very, very late. My biggest take of these was on August 21, more than a month from their usual flight period, and they were fresh specimens. Lycaenopsis pseudargiolus, much more common than in recent years, was still flying as late as July 10 at 8000'. Glaucopsyche lygdamus was taken July 27 & 29 at 9000', very late records. Most of the skippers were less numerous than last year, but Pyrgus centaureae was unusually common throughout the alpine regions. In the moths, Pseudohazis nuttallii was plentiful in the Rabbit Ears Range, and also near Caribou at about 10,000 feet. In south-central Colorado the larvae of a species of Malacosoma completely defoliated millions of aspen trees. Gnophela vermiculata was very abundant. Rotger found a few Ctenucha cressonana near Capulin.

Some of the highlights in this area were discoveries by the collectors. Rotger's prize was the capture of several specimens of Oeneis daura oslari! He also took Speyeria cybele, Atlides halesus, and found a colony of Boloria freija at Platoro, Colorado, which may be a southern record. Brown took 3 Yvretta rhesus, the first since the middle 1930s, as well as the first Euchloe olympia and Callophrys sheridani from the Colorado Springs area; his other unusual captures were Agraulis vanillae, Callipysche behrii, and Libytheana bachmanii. At Marias Pass in Montana he took a worn specimen of Speyeria that may be the long-lost nokomis! Here in Boulder County, the Remingtons added Eurema mexicana to E. nicippe taken last year, and also Junonia coenia, Anaea andria, and Pholisora catullus. My most exciting finds were Incisalia iroides and Pieris calyce. One other item, of which a few specimens showed up this year, has created a lot of interest: a race of Boloria toddi (= bellona). It may not be new, for it was apparently recorded by the Wheeler expedition, but since then has been overlooked or not found, for this year is the first mention we have heard of it. Brown took it, Rotger found two specimens north of Meeker, in the N.W. part of Colorado, and the Remingtons and I found it, not only on Rabbit Ears Pass, but also in a little willow draw in the sagebrush east of Muddy Pass.

In conclusion, a thumbnail sketch shows the following: That 1947 was a peak year for most species in this Area, with 1948 and 1949 showing decreases. Only 3 or 4 species reached a peak in 1949. The season began about on time, but most of the summer species were a little late, with the alpines in particular showing a greatly retarded flight period.

Contributors: K.Bowman; F.M.Brown; D.Downey; C.Glasgow; A.G.Lauck; W.C. Minor; P.S.,C.L.,& J.E. Remington; H.Rodeck; B.Rotger; D.B.Stallings; O.D.Standard.

4. GREAT PLAINS- TEXAS AND EASTERN PLAINS OF ROCKY MTS. STATES TO SASKATCHEWAN AND MANITOBA

by Don B. Stallings
Caldwell, Kansas

For the third successive season spring came late on the Great Plains. A few more times of this and we will have to revise our idea of what "late" is. 1949 on the Great Plains was ushered in with "The Great Blizzard of '49". The blizzard swept into the plains on January 2 and snowstorms continued until February 19. During this period temperatures went as low as 50° below zero with winds up to 80 miles an hour and snow drifts up to 30 feet. Blizzards extended into southern Oklahoma; even the "Valley" in Texas had freezes that destroyed citrus fruit.

Of most interest is the negative report of no material changes observed in individual Lepidoptera. Generally the harder-to-get species were more numerous than usual. After the storms I expected to see some extreme spring forms, but they did not show up.

NORTH

Reports from our northern observers indicate that the season was a little earlier than usual for that part of the Area. Collecting data in June, for Plebeius saepiolus, Glaucopsyche lygdamus, and Coenonympha inornata, indicate that the season was about 7 days early at that time. In Saskatchewan a series of 12 Poecilopsis rachelae was collected, the largest series for any one recent season. Light trap collecting was especially good and produced three new records of phalaenids and a number of rare notodontids.

Collecting in the north was good up to the middle of July, but thereafter was poor. Many species usually abundant were rare, including all Speyeria, Boloria toddi, Colias, Limenitis, and Lycaena. Erynnis brizo and juvenalis were more abundant than usual. Vanessa cardui appeared first in June; all specimens were worn, which would indicate that they were migrants. Later in the year there were "swarms" of fresh specimens.

In Manitoba the 1949 season was preceded by a very dry fall. The winter was steadily cold without any particularly low temperatures. In contrast the 1949 fall in the north has been wet.

MIDDLE

In the Kansas-Oklahoma area the season commenced dry and about 10 days late. Incisalia henrici was at normal or above. Euchloe olympia was above normal. Erynnis were common in April. Phyciodes gorgone produced one of their biggest flights in April. Hesperia metea was observed in good numbers April 16 in the Wichita Mts. of Oklahoma. Megathymus yuccae again produced a good flight throughout the area.

The month of May was very wet. As a result observations were restricted, but the May flights appeared below normal. This observation may be due, in part, to the fact that collecting was usually done on the week ends and the rain clouds seem to pick Saturday and Sunday to unload. The fall was somewhat more wet than 1948 and fall forms appeared to occur in normal numbers.

At Ottawa, Kansas, usually common Sphingidae, such as Isogramma hageni, Sphinx eremitus, S. chersis, S. drupiferarum, Hemaris diffinis, and Xylophanes tersa, have been remarkably scarce. New records for the locality were: Darapsa pholus (1); Pholus labruscae (2 ♂♂); Erinnyis alope (♀). Catocalinae were very plentiful at sap, especially Catocala epione, C. illecta, C. grynea, C. micronympha, along with rare C. amestris and C. insolabilis. An uncommon migrant taken at willow sap June 22 was a ♀ Erebus odora. Butterflies in fair numbers this year were: Papilio marcellus; P. cresphontes; Zerene caesonia; Lethe portlandia; Speyeria cybele; Libytheana bachmanii; Feniseca tarquinius; and Lycaena thoe.

A sampling of Colias in Cloud County, Kansas, on July 3rd disclosed 73% eurytheme, 13% philodice, 13% hybrids, with 43% of the females white.

SOUTH

Spring collecting in the Dallas-Fort Worth area was above normal. Species particularly abundant were: Danaus plexippus; Euptoieta claudia; Nathalis iole; Incisalia henrici; Erynnis horatius; Atlides halesus; Achalarus lycidas; and Amblyscirtes nysa. Unusual captures were A. eos and Mitoura xami. In May the heavy rains in Texas produced major floods in the Ft. Worth and Dallas area. As a result there was considerable use of DDT in the area. Collecting thereafter was below normal. Megathymus yuccae was surprisingly absent around Dallas. In September, near Tyler, Lerodea l'herminier and Amblyscirtes alternata were discovered.

Western Texas received more rain than usual, which resulted in an extra large assortment of wild flowers in bloom. Collecting was well above normal. In the Big Bend country of southwest Texas the following species appeared in good numbers: Strymon polingi; Strymon alcestis; Papilio multicaudata; Phyciodes vesta; P. picta; P. phaon; Megisto rubricata; Euptychia dorothea; Asterocampa clyton; A. celtis; Limenitis bredowi; Achalarus casica; Erynnis meridianus; E. tristis; E. funeralis; Carisma edwardsii; Antigonus evansi; A. pulverulenta; Amblyscirtes eos; A. nysa; A. texanae; A. oslari; A. nereus and A. phylace. The following were uncommon there: Hesperia uncas; H. viridis; H. pahaska; Yvretta carus; Cogia hippalus. Larvae of Megathymus mariae were abundant in Agave lecheguilla in western Texas.

Contributors: P.F. Bruggemann; H.A. Freeman; W.H. Howe; E.M. Kinch; C.S. Quelch; C.L. Remington; J.R. Turner; R.C. Turner Jr.

by P.S. Remington, Jr.
St. Louis, Missouri

Although it is not easy to generalize about the weather in an area as large as this, most observers reporting agreed that the unusually mild winter did not affect the quantity of Lepidoptera produced nor upset greatly the usual procession of species. There was some diminution in the western part of the zone in May and June possibly due to cool, dry weather, but July and August showed the usual pattern and the mild fall extended the season longer than usual. Near St. Louis butterflies were seen on the wing as late as November 20.

MISSOURI. Collecting started in early April as usual and the same species were found as reported last year, except that no Euchloe olympia at all were seen in their usual haunts. The same is true of Strymon ontario, which, although always rare, could usually be found in certain spots. It has not been seen here in numbers for nearly ten years now. Vanessa cardui larvae were very numerous on hollyhocks in St. Louis on July 1, which was the date we left for Colorado. The prolonged fall here brought out the late season species in numbers. There was a noticeable migration of Danaus plexippus through St. Louis in early September - no large masses of butterflies, but numbers of individual specimens flying south for at least a week. An unusual capture was several specimens of Feniseca tarquinius within the city limits. The larvae have not been discovered yet, but may feed on the aphis which infests the hawthorn trees.

ILLINOIS. Lauck, of ALTON, like the writer, spent part of the summer in the Rockies, but he reported good spring collecting in April and early May. He was the only collector to find Papilio in large numbers, most collectors in this zone reporting that Papilio seemed scarce this year. He found ajax, P. glaucus, philenor, troilus and P. cresphontes plentiful. It was also a good year for Lethe portlandia. Lauck's report on the migration of Danaus plexippus is interesting. He saw two flights, one on Sept. 10, the other on Sept. 20. "The second one centered at Jerseyville and numbered several thousand. The Monarchs stopped over night in the trees on one of the main streets of the town. A thunderstorm hit Jerseyville early on the morning of the 20th, but the Monarchs only tightened their grip and rode out the storm in great shape. After the storm was over, the sun came out and the Monarchs were again on their way south." Lauck also reports more Eacles imperialis during July and early August than at any time in the past 15 years. Several were raised to the pupa stage.

From the CHICAGO area, Wyatt reported that the Heliothiinae and Papaipema spp. were in average numbers. Leuschner, a welcome new reporter, noted some significant absences of species usually taken near Chicago - very few Phyciodes nycteis, no Euptoieta claudia, Lycaena dione, or Libytheana bachmanii. Many Telea polyphemus larvae were found on swamp willow and he says "I am still looking for my first parasitized polyphemus larva or cocoon, and yet about 5 out of 6 Platysamia cecropia larvae that I have found have been attacked." Datana ministra was found in numbers feeding on willow in late August. Phlegethontius sextus were more numerous than ever before during late August and early September, but no Celerio lineata or Paonias excaecata were seen, although quite plentiful in other years. Catocala were out early. Another Chicago collector, Woodcock, has started an ambitious project with moths. He prepared lighted sheets in his back yard and collected virtually every night of the year through to November. He has hundreds of specimens with full data and hopes to have a complete list of his city ward by late spring. Woodcock's only comment on butterflies was that Pieris rapae seemed exceedingly common in Chicago this year. Wren, contributing the most detailed report for Area 5, considers 1949 to be one of the best butterfly years he can remember. He notes, as I did, that an unusual hot spell early in spring confused the time of emergence of Euchloe olympia, since he found none at the expected time. In the Chicago area, he found the following abundant: Speyeria cybele, S. aphrodite; Boloria selene; B. toddi; Phyciodes tharos; Nymphalis milberti; N. antiopa (scarce after midsummer); Vanessa atalanta; V. virginiensis; Junonia coenia; Limenitis astyanax; L. archippus; Lethe portlandia; L. eurydice; Minois alope; Strymon acadica; Lycaena hypophlaeas; Everes comyntas; Zerene caesonia; Colias eurytheme; C. philodice; Pieris protodice; Papilio ajax; P. glaucus; Ancyloxypha numitor. Scarce species commoner in 1949 than usual were: Nymphalis j-album; Asterocampa celtis; Lethe creola; Libytheana bachmanii; Nathalis iole (one). He found Papilio troilus absent this year.

At COAL CITY, Grundy Co., Wren found the following species common in early August: Danaus plexippus; Limenitis archippus; Papilio ajax; Colias eurytheme; Pieris rapae; Everes comyntas; Minois alope. Colias philodice, Nathalis iole, Lycaena hypophlaeas were scarce. At one spot along the highway for a stretch of one-half mile on one side of the road he saw tens of thousands of the beautiful little arctiid, Utetheisa bella, on the roadside vegetation; not one was on the other side of the highway.

INDIANA. Price took a worn Calephelis muticum in a bog in Lagrange County on August 8 (new State record?). Leuschner took Catocala ilia, C. lachrymosa, and C. paleogama at Tremont on July 4.

OHIO. There were three reports from the State. Romine spent most of his vacation in Colorado, but reports Lethe portlandia more common than he has ever found it in Ohio, in company with Asterocampa celtis. Price observed Vanessa cardui common for the first time in 7 years at Payne. Hibernating specimens appeared in numbers in early May. In July and August a few fresh ones appeared, but he thinks spraying reduced their numbers. Rare finds were Phoebis sennae, Nymphalis j-album, Prenes ocola, Atrytone logan and Lerodea fusca, all taken in Paulding and Williams Counties. Ehrhart, of Antwerp, captured three specimens of Atrytone dukesi, formerly known from Alabama.

FIELD SEASON SUMMARY 5. CENTRAL - cont.

KENTUCKY. Carl Cook, of Crailhope, contributed the only report. Because of the mild winter, butterflies appeared about 2 weeks ahead of schedule, some as early as March 5. Papilio marcellus was out in normal numbers for the first time since 1946. Incisalia henrici, usually rare, was quite numerous. Other early captures included Strymon m-album and Anthocharis midea. The heavy rains in June and July seemed to affect Euptychia gemma, E. euryta, Mitoura damon, and Libytheana bachmanii, which were less common than usual. Species occurring in normal abundance were Phoebis sennae, Eurema nicippe, E. lisa, Junonia coenia, Limenitis astyanax, L. archippus, Asterocampa celtis, and Strymon cecrops. Notable captures were one Euphydryas phaeton and one very worn male Speyeria diana. On October 3 a great many fresh Anaea andria were observed. There was also a great fall abundance of Danaus plexippus.

MINNESOTA. Leuschner collected in Minnesota from July 10 through August 14, and sent the only records from that State. Among the butterflies, Lethe portlandia and Feniseca tarquinius were common in the forests. L. eurydice was at the end of its season when he arrived. Speyeria cybele, Boloria toddi, Limenitis arthemis and Coenonympha inornata were also noted. He concentrated on moth collecting at lights. No Catocala were seen although he carefully examined the trees in the daytime. Phalaenidae were scarce at lights - only one species of Mamestra and a few Acronicta were taken. The most common species of moth was a species of Olene. Malacosoma americana was next most frequently taken. It was rather late for Saturniidae and only Automeris io was taken. Of the Sphingidae, Smerinthus geminatus was the commonest. Others included Pachysphinx modesta, Atreides plebeia and Sphinx kalmiae. Arctiidae were well represented and included Hypoprepia miniata, H. fucosa, Phragmatobia rubricosa, Apantesis virgo, A. virguncula, Diacrisia virginica, Arctia caia, and Haploa confusa.

WISCONSIN. Griewisch at GREEN BAY sent some fine specimens of Speyeria atlantis, Minois nephele, Poanes hobomok pocohontas, Hesperia sassacus, Plebeius scudderii, and P. saepiolus. Other common species were Carterocephalus palaemon, Polites mystic, P. peckius, P. themistocles, Phyciodes tharos, Thorybes pylades, Proteides clarus, Atrytone ruricola. Less common were Erynnis brizo, E. juvenalis, Amblyscirtes hegon, Colias interior, Atrytone logan. On June 13, Griewisch caught a fresh Zerene caesonia, his first. Other unusual catches were Atrytone bimacula, Limenitis astyanax, Libytheana bachmanii, Asterocampa clyton, Phycanassa viator. Entirely lacking were Phyciodes nycteis and Melitaea harrisii.

Arnhold, at CHIPPEWA FALLS, had success in raising Catocala amestris on Amorpha fruticosa (False Indigo). Nearly full grown larvae were found on this plant and all but one (parasitized) emerged by July 15. This plant is also host to C. nuptialis. Arnhold also noticed Phlegethontius quinquemaculatus, which became a nuisance on tomato plants, increased this year, like other Sphingidae. Toward the end of May he saw fresh Danaus plexippus flying north and they were plentiful all summer, although no migration was observed. Arnhold mentions that in nine seasons of collecting in Wisconsin he has never seen any of the black Catocala, such as epione, and believes they do not get that far north.

Sieker, at MADISON, reports a good year, with Boloria selene and B. toddi(=bellona)extremely abundant as was Speyeria aphrodite. Strymon falacer and S. edwardsii and the Vanessa spp. were more common than 1948. Less common than usual were Lycaena epixanthe and the Polygonia. Absent were Glaucopsyche lygdamus, Euchloe olympia, and Colias interior. Of the sphingid moths Sieker took Sphecodina abbottii, Amphion nessus, Cressonia juglandis, Smerinthus cerisyi. He reports the saturniid moths becoming more abundant every year; Actias luna (very common); Platysamia cecropia (common): Telea polyphemus (common), Callosamia promethea (rare). By sugaring, Sieker had good success with Catocala this year, taking ilia, coccinata, nuptialis, amestris, cerogama, relicta, unijuga, parta, paleogama, cara, amatrix, vidua, retecta, epione, concumbens, amica, mira. Other moths seemed scarcer than usual.

MICHIGAN. Wren travelled to WAKELEE, Cass Co., to try to find the rare Megisto mitchelli. Although five collectors in the party searched the type locality carefully, no mitchelli were seen. It is to be hoped that this rare species has not been exterminated. Species taken included Euptychia euryta, Strymon acadica, Lycaena thoe. On a trip in September to Roxana, Eaton Co., additional species found were Danaus plexippus (more abundant than usual), Limenitis archippus, Boloria toddi, Nymphalis milberti, N. j-album.

Beebe, at ECORSE, reports a migration of Danaus plexippus on August 4, flying after sundown. He found Epiblema strenuana, E. otiosana, and E. scudderiana common as usual. He made some unusual captures of moths, mainly micros. One of these, Epinotia nonana, was previously known only from Colorado and Illinois. Another Michigan record was Eucosma floridana. Pigritia spp. seem to be increasing.

Mrs. Hynes, of BATTLE CREEK, continued her successful efforts to rear moths, and her observations of butterflies were about the same as last year.

Near YPSILANTI, Clench found Lycaena helloides and Thymelicus lineola much reduced in numbers from 1948. He found no spring brood of the usually common Pieris protodice, and Strymon falacer and S. caryaevorus seemed scarcer than in 1948. Flight periods in general were the same as in 1948.

ONTARIO. W.R. Henson observed a Vanessa cardui migration near Sault Ste. Marie on September 30, moving south about 4 miles per hour along at least a two mile front, about 30 to 120 specimens per ten yard front per minute.

No reports were received from West Virginia or Iowa.

Contributors: F.R. Arnhold; R. Beebe; H.K. Clench; C. Cook; O.E. Ehrhart; L.W. Griewisch; W.R. Henson; Mrs. Vonta P. Hynes; A.G. Lauck; R. Leuschner; H.F. Price; C.L. Remington; R. Romine; W.E. Sieker; H.E. Woodcock; G.R. Wren; A.K. Wyatt.

by Ralph L. Chermock
University, Alabama

Climatic conditions in the southeastern United States were relatively normal during 1949, although spring was somewhat late in the northern portions. As a result, the various species of Lepidoptera were little affected, and the variation in abundance and occurrence was slight.

The collecting season in MARYLAND and the DISTRICT OF COLUMBIA was fairly normal, although a somewhat colder and extended winter had delayed the emergence of a number of species in the spring. Fales, collecting primarily in Prince George and Montgomery counties, noticed that the following species were late in appearing: Papilio philenor; Papilio glaucus; Papilio marcellus; Anthocharis midea; Eurema lisa; Junonia coenia; Vanessa virginiensis; and Limenitis astyanax. The following species were on wing somewhat earlier than normal: Vanessa cardui; Colias eurytheme; Papilio polyxenes; and Poanes zabulon. The remaining species appeared at about the same time. It is significant that a majority of the species which were late in emerging are more southern in distribution; while the remainder were species normally associated with cooler climates. In the vicinity of Washington, D.C., Shappirio noticed that the spring broods of Papilio marcellus and Anthocharis midea were rare. He also stated that the season was two to three weeks late in the early part of June, but returned to normal during August. During this period, Minois alope was exceedingly abundant in comparison to previous years; and Papilio marcellus was unusually common at Great Falls and London County, Va.

Blevins has made an interesting observation on the effect of DDT. He writes, "The swamp, which is the type locality of Poanes massasoit hughi Clark (Beltsville, Md.), was sprayed with DDT from planes in October, 1948, and April, 1949. Hughi has been rare in recent years and as far as I know, none were taken in 1949. These swamps constitute a good collecting locale for many local species in normal years, but this year the quantity of specimens was much less than normal, especially hesperiids. Neighboring swamps seemed to have their usual number of specimens. Thus, the evidence indicates that the DDT was harmful to Lepidoptera. However, the data is too incomplete on which to base a final evaluation."

In VIRGINIA, King noted that the season seemed to be fairly normal, both in temperature and the occurrence of butterflies. However, in South Carolina, he mentions that the fairly mild winter resulted in an erratic flowering of plants, affecting the abundance of many of the rarer species such as Speyeria diana. Gottschalk noted particularly that neither Vanessa cardui nor Danaus plexippus was unusually abundant around Salem throughout July.

Shappirio has made a significant observation. "I collected along the South Carolina coast between Myrtle Beach and Georgetown. Thus, I was in the path of a hurricane which arrived several days after I reached Myrtle Beach. The day after the hurricane hit, a Monday, I collected Hymenoptera as if there had been no storm; insects were in great numbers. As might be expected, probably the majority of the older specimens were destroyed. I did find a few battered bodies of Phoebis eubule under a pavilion. During the following days, Lepidoptera appeared to be rather common. The common spp. of the region such as A. vanillae and the common Sulfurs were very abundant."

In GEORGIA, Eustis found the seasons and flights normal. However, Euptychia sosybius ("Second brood in August") was abnormally abundant, along with Polygonia interrogationis, Limenitis astyanax, L. archippus, Asterocampa celtis, and Libytheana bachmanii. Rhabdoides cellus, which used to be common in the area, has not been observed for seven years. King has collected Strymon liparops and Anthocharis midea at Savannah, along with Heliconius charithonia. In western Georgia, Smith observed a fairly normal season, with the various butterflies emerging at the expected times. He also found the first Megathymus yuccae since 1941 in that area.

King, collecting in central FLORIDA, mentioned that the year was relatively normal. However, Euptychia cymela was scarcer than usual, and was on wing somewhat earlier. Anartia jatrophae failed to exhibit a northern migration this year; and Strymon calanus had failed to appear around Lake Apopka by May 15. In southern Florida, a mild winter together with the storm damage of 1948 upset the Lepidoptera. Papilio aristodemus ponceana apparently was on wing somewhat earlier than normal, although the other butterflies were normal in their appearance.

In ALABAMA, the winter was relatively mild. As a result, freshly emerged specimens of Phoebis eubule, Eurema lisa, E. nicippe, Colias eurytheme, and Pieris rapae were observed frequently throughout January and February. Occasional specimens of Agraulis vanillae were also seen during this period. The spring flight was normal. The summer was relatively humid, and butterflies were then more abundant than in 1948. However, some species were relatively scarce, such as Euptoieta claudia, Junonia coenia, and Atalopedes campestris. On the other hand, Eurema jucunda, Lethe portlandia, Euptychia sosybius, E. gemma, Vanessa cardui, Asterocampa celtis, Amblyscirtes textor, and Lerema accius were unusually abundant. The fall was normal, with flights continuing well into November before numbers became markedly depleted.

Some interesting observations have been made on the migration of Danaus plexippus, the Monarch Butterfly. On September 18, 1949, Shappirio observed about two dozen specimens flying south against a gentle southerly breeze between Frederick and Hancock, Maryland. Fales made a number of observations along the coast. The first migrating specimens were seen on August 6, after which time they slowly increased in numbers until they were extremely abundant

during the latter part of September. He observed large migrations at Piney Point, Md., on Sept. 23 and 24, which suddenly disappeared on the 25th. On October 14 he observed another large migration at Beltsville, Md., flying at about 400 feet, and all heading south at about 100 specimens per hour.

King noticed that in the Roanoke area of Virginia, the Monarch was abundant from August 15 to October 15. The flight seemed to reverse itself daily so that it was impossible to interpret the general direction of migration. In Georgia, Eustis noticed a thin flight in October, flying in a southerly direction. At Tuscaloosa, Alabama, a sparse migration in a northerly direction was noted during April. The butterflies were never markedly abundant, and exhibited a rather leisurely flight, feeding on flowers very frequently. In the latter part of September, the Monarch again began to appear in increasing numbers, until during the first two weeks of October, relatively large numbers were seen flying in a southerly direction. On October 21 a large

6. SOUTHEAST - cont.

mass migration was observed flying through Tuscaloosa at an altitude of about 300 feet, forming a dark cloud in the sky. Migrating individuals were found as late as November 19.

Fales found Phoebis eubule migrating over Chesapeake Bay at altitudes of three to twenty feet, on October 1, continuing throughout the afternoon, with hundreds passing over the area. In Tuscaloosa, Alabama, a relatively large migration of this species was observed, beginning in the early part of October, and lasting throughout November, with the majority of specimens migrating in a southerly direction, occasionally southeast.

No reports were available on Tennessee, Arkansas, Mississippi, and Louisiana; nor any data on Heterocera!

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Contributors: T.B. Blevins; W.M. Davidson; H.W. Eustis; J.H. Fales; C.W. Gottschalk; H.L. King; D.G. Shappirio; M. Eugene Smith.

7. NORTHEAST - MARYLAND NORTH TO SOUTHERN QUEBEC

by Eugene G. Munroe
Macdonald College, Quebec

In the Northeastern Area the season of 1949 was uniformly preceded by a mild winter with light snow cover; moderate temperatures probably obviated excessive frost damage; in the Rochester, N.Y., area there was little ground frost, in contrast to the deep penetration reported last year. The spring was rather early and in most areas reasonably warm; species tended to emerge very early in spring and particularly in early summer; this tendency appears to have been more evident inland than in coastal localities, with many species appearing from two to five weeks earlier than in 1948. Unusual drought prevailed throughout the region from early July to early September, with a deleterious effect on collecting in most localities; marshy and wooded areas were much less severely affected than dry or open ones, where collecting approached or exceeded normal levels. In Nova Scotia and the Canadian and Hudsonian zones of Quebec the unusual dryness had if anything a beneficial effect, and collecting was unusually productive. In all parts of the region southern species, and certain normally rare ones, were present in unusual numbers.

Since only about ten per cent of the Society members in the area reported, the general pattern cannot be given in greater detail. Three species appear to have been present in much larger numbers than usual over a wide area: Danaus plexippus, Vanessa cardui, and Phlegethontius quinquemaculatus. Unfortunately, few definite dates are available for D. plexippus. The first record for the Area is Barnstable, Mass., Apr.30; it was seen at Ithaca, N.Y., June 4; fresh specimens in moderate numbers appeared suddenly in the Montreal, Que., region about June 9. The species was abundant in all areas throughout the summer, and lingered in the autumn at St. Annes, Que., to Oct. 10, at Rochester, N.Y., to Oct. 30, at Ithaca, N.Y., to Nov. 8, and in Connecticut to Nov. 15. Little was reported concerning the progress of the populations throughout the summer; larvae taken at Shawinigan Falls, Que., in June yielded adults in the first three days of July. In the Montreal area no definite fall migration or directional movement was seen, although the species was common and was carefully watched; the species was increasing in numbers at Rochester in early September, and a definite migration was seen at Ithaca on Sept. 18; the peak of the migration in Connecticut was on Sept. 24, and a heavy migration was reported at Cape May, N.J., on Oct. 1. It is noteworthy that all definite migratory movements were at dates considerably before the last reported occurrence of the species in the locality. The population appears to have been above normal everywhere, and dense populations extended farther north than is usual; in the Province of Quebec, where the species is usually scarce, it was very numerous in 1949, as far north as the Shawinigan Falls region, i.e., to about the limit of the general occurrence of milkweed; the first appearance was about a month earlier than normal; the species was not seen in the Laurentide Park in August.

Vanessa cardui was abundant everywhere; it was common in Connecticut by April 25 (probably overwintered); a frayed specimen was seen in Augusta, Me., on May 15 and another on June 3; a few fairly

fresh specimens were seen at Ste. Anne de Bellevue, Que., in late May. A massive generation appearing in late June or early July was reported from almost all localities, and in most localities abundance continued almost unaltered until late summer or early autumn; the larval progeny of this generation were much in evidence, and damage to hollyhock was reported from several places. At Shawinigan Falls many larvae were seen in late July, also many empty larval nests, but few pupae, and the species seems to have become scarce in August, although it remained common in the Montreal and Eastern Townships regions. Badly worn specimens were present in large numbers in the Laurentide Park in the first half of August.

Phlegethontius quinquemaculatus was common farther north than usual, being rather abundant in the southern part of the Province of Quebec, where in most years it is rare or absent. Captures in the Ste. Anne de Bellevue area are from June 12 to July 3; larvae were abundant enough to be of economic importance on tobacco and tomato, becoming full grown and pupating about the end of July; a definite second generation emerged in September and October, a most unusual occurrence in this region. The species is also reported as being unusually common in central Maine.

The remainder of the summary is given by regions.

NEW JERSEY (Ehrlich). Early season in Essex Co. normal: Nymphalis antiopa mid-March; Colias philodice first week of April; Pieris rapae and Lycaenopsis pseudargiolus 2nd week of April. Fauna much below normal by June, with Papilio ajax, Lethe eurydice, Polygonia interrogationis, Vanessa atalanta, and Poanes zabulon, as well as other species, very scarce. Most species scarce in July, but unusual records were Strymon edwardsii, July 2, Achalarus lycidas, July 3. In August and September general scarcity continued, such species as Eurema lisa, Colias philodice, Papilio cresphontes, and Euptoieta claudia markedly below normal. Collecting in special localities was, however, productive in July.

At Springdale and Lake Lackawanna on July 9, the following were found: Poanes massasoit; Boloria selene; B. toddi; Minois alope; Lethe eurydice and portlandia; Polygonia comma; Speyeria cybele and idalia; Atrytone pontiac; Strymon liparops; Mitoura damon; Lycaenopsis pseudargiolus. On July 16 the following additional species were present: Calephelis borealis; Lycaena hypophleas; Papilio troilus, glaucus, and philenor; Wallengrenia otho; and Polites peckius.

At Lakehurst on July 10, Lycaena epixanthe was taken in bad weather, but Euptychia areolata was not seen; Erynnis spp. were common and P. philenor was taken; by July 19 the cranberry bogs had been drained, and L. epixanthe was absent, but two Atrytone ruricola were taken.

PENNSYLVANIA. Philadelphia (Ehrlich): April 26-30, fresh Anthocharis midea were common in a restricted locality; general fauna about normal.

Lancaster Co. (Ehle). Butterflies were in general above normal abundance, but appeared at about the usual times. In abnormally large numbers were: Asterocampa celtis; Vanessa atalanta (3rd week July); V. virginiensis (latter half Aug.); Polygonia interrogationis, autumn brood (Oct.); P. comma at same time; Euphydryas phaeton (mid-June); Strymon melinus (late Aug.); Polites verna (June 19-25); Atrytone pontiac (late June); Eurema lisa was unusually scarce. Euptoieta claudia somewhat scarcer than usual. Species taken for the first time by Ehle in Lancaster Co. were: Incisalia augustus; Pyrgus centaureae; Hesperia sassacus; H. metea; Polites manataaqua; Panoquina ocola. Taken for the first time since 1942 were: Pieris protodice; Hylephila phyleus; since 1943: Papilio cresphontes.

NEW YORK. Horseheads and Sardinia regions (Rupert). Early spring collecting about normal; about June 20 many species appeared which normally occur in July, among them (June 20-30): Catocala crataegi and mira; Agroperina dubitans; Apamea americana; Eugonobapta nivosaria; etc. Apicia confusaria appeared in mid-June, about 2 weeks ahead of normal. In July and August moths appeared in normal numbers at bait along the Cattaraugus, south of Sardinia, but elsewhere in the neighborhoods of Sardinia, Horseheads, and Ithaca, bait was unproductive, even in normally good spots. In the Cattaraugus Valley Euparthenos nubilis, Acronicta connecta, Catocala crataegi, C. mira, C. parta, C. meskei, Calpe canadensis, and many other species were particularly common. In the same locality, Lethe portlandia was abnormally abundant, and congregated in hundreds on bait lines, flying until well after dusk. Autumn collecting was poor, as for several years past; Harpaglaea sericea and Stamnodes gibbicostata were, however, reasonably abundant, the latter for the first time in several years.

Ithaca region (Keji). The following are sight records of butterflies: Papilio ajax, May 2 - Oct.9, 28 days earlier than 1948; P. glaucus, May 18 to July 27, 25 days earlier than 1948; Papilio troilus, June 21 to Aug. 25, seen on 17 days, as against none in 1948; Pieris rapae, April 20 to Oct. 30; Colias eurytheme, June 2 to Nov. 15, more numerous than in 1948, and appeared 22 days earlier; maximum abundance after mid-Oct.; C. philodice, May 3 to Nov.15, 23 days earlier than in 1948, very common; Lethe portlandia, July 12 (1 specimen); Minois alope alope, Aug. 9; M. alope nephele, June 28 and (worn) July 19; Euptychia eurytus, June 1 and July 12; Speyeria cybele, June 12 to Sept. 12, about a month ahead of 1948; Boloria toddi, June 20 to Sept. 19, seen ovipositing on Sept. 19; Euphydryas phaeton, June 4 to July 3, not seen in 1948; Phyciodes tharos, May 13 to Oct. 16, commoner from July on, over a month ahead of 1948; Polygonia interrogationis, July 19 to Sept. 13, much scarcer than in 1948 and about 6 weeks later; Vanessa atalanta, May 22 to July 21; Limenitis arthemis, June 6-19; L. archippus, June 24 to July 29; Lycaena thoe, June 24 to July 29, fairly common; L. hypophlaeas, June 4 to Oct.16, seen fewer days than thoe; Everes comyntas, June 11 to Sept. 4, commoner and about a month earlier than in 1948; Lycaenopsis pseudargiolus, May 4 to July 30, scarce; Proteides clarus, June 21 to Aug. 15; Pyrgus communis, July 24 to Oct. 10, commoner than in 1948; Pholisora catullus, July 4 to Sept. 18; Ancyloxypha numitor, May 24 to Sept. 5.

Rochester region (Kimball). All common butterflies were scarce, as well as the following normally common moths: Agrotis ypsilon; Lacinipolia renigera;

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Orthodes and Graphiphora spp.; Harpaglaea sericea; Eucirrhoedia pampina; Agroperina dubitans; Septis arctica; Apamea americana; Amphipyra pyramidoides; Arzama obliqua; Erastria spp.; Catocala amatrix; Ichthyura inclusa; Symmerista albifrons; Heterocampa biundata; Alsophila pometaria; Coryphista meadi; Lygris diversilineata; Semiothisa gnophosaria; Anacamptodes pampinaria; Phigalia titea; Eugonobapta nivosaria; Xanthotype urticaria; Homochlodes fritillaria; Hyperetis amicaria. Unusually abundant were: Apantesis nais; Morrisonia evicta and confusa.

CONNECTICUT. New Haven region (Remingtons and Bellinger). After cool weather in the early spring, collecting reached normal levels; the extreme drought extended from mid-June to mid-August, but with little evident effect on the fauna. Representative captures and dates are: Phigalia titea, Mar. 28; Lycaenopsis pseudargiolus, Apr.10 - May 8 (in great numbers about Apr. 20, larvae very numerous later, of 200 taken at random 30% were diseased and 10% parasitized); Erynnis brizo, Apr.11 to May 7; Pieris rapae, Apr.11; Mitoura damon, Apr.11, becoming numerous by Apr.24; Ectropis crepuscularia, Melanolophia canadaria, Abbotana clemaria, Apr.14; Anthocharis midea, Apr.21-May 15; Erynnis juvenalis first week of May; Incisalia augustus, Apr.30, and I. niphon, May 8; Strymon melinus, 1st generation scarce, about Apr.30, but August generation extremely abundant; Papilio glaucus, Apr.30, abundant to late June; Isturgia truncataria, common in bog May 1; Lycaena hypophlaeas common May-June, but autumn generation scarce, in contrast to 1948 abundance; Boloria toddi fairly numerous May 6 - Sept. 17; B. selene locally common June 11-18 and early September only; the following spp. common 1st three weeks of June: Asterocampa celtis; Limenitis astyanax; Thorybes pylades; I. bathyllus; Phyciodes nycteis; Euphydryas phaeton; Strymon falacer; S. edwardsii. For the 2nd successive year a Bucculatrix breeding on Quercus was almost in plague abundance, countless millions spinning down in mid-June to pupate. Melitaea harrisii appeared June 14; Speyeria idalia late Aug.-Sept., common; Hesperia leonardus abundant Sept.3-11; autumn generation of Eurema lisa scarcer than in 1948. The following species are recorded as abundant, without dates: Everes comyntas; Pholisora catullus; Phyciodes tharos; Papilio troilus; Colias eurytheme; C. philodice; Limenitis archippus; Polites themistocles, mystic, and peckius; Euptychia eurytа; Ancyloxypha numitor; Vanessa atalanta; V. virginiensis; Speyeria cybele; Proteides clarus; Poanes hobomok. Very unusual dates or species were: Eurema lisa, June 11; Lethe eurydice, June 18; L. portlandia, June 23; Speyeria aphrodite, Sept. 23; Lycaena thoe, Sept. 11 and 17; Pieris protodice, Oct. 8 and 10; Hylephila phyleus, Oct. 17; Pyrgus communis, Oct. 10. Larvae of Phlegethontius quinquemaculatus were common and P. sextus rare on Physalis in Sept., with surprising abundance of black form larvae of quinquemaculatus. A fresh Celerio lineata was at light Sept. 25. Erannis tiliaria abundant Oct. 28 - Nov. 23; Alsophila pometaria, scarce in Nov., becoming common in Dec., taken to Dec. 21.

Putman (Klots). Collecting probably below normal in August.

7. NORTHEAST - cont.

MASSACHUSETTS. Vicinity of Barnstable, Cape Cod (Kimball). Adverse influences were drought, continuing to late August, and the spraying of the entire Cape from the air with DDT in late May; collecting was reasonably good in early July and in Sept.-Oct.; response to bait was poor; many species which might have been expected by analogy with previous experience on Nantucket and Martha's Vineyard were absent. The following were common: Erynnis brizo and juvenalis (late Apr.); Ancyloxypha numitor; Phlegethontius sextus; Lapara bombycoides; Smerinthus spp.; Anisota stigma; Crambidia pallida (abundant); Halisidota tessellaris; Hyphantria textor; Feltia ducens; Anomogyna spp.; Protolampra brunneicollis; Papaipema marginidens; Schinia arcigera and brevis; Cryphia spp.; Marathyssa inficita; Paectes oculatrix; Autographa falcifera and brassicae; Doryodes spadaria (very abundant, late June to mid-Sept.); Anticarsia gemmatilis; Gabara bipuncta; Bleptina caradrinalis; Datana drexeli; Tolype laricis; Synchlora aerata; Metasiopsis ossularia; Scopula enucleata; Pleuroprucha insulsaria; Percnoptilota obstipata; Euphyia centrostrigaria; Semiothisa spp.; Apicia confusaria; Lagoa crispata; Hymenia spp. Nomophila noctuella; Loxostege helvialis; Schoenobius spp.; Crambus spp.; and many Phycitinae. Particularly interesting captures were: Magusa orbifera (3); Cleora manitoba (2); and Topeutis perstrialis.

Vicinity of Waltham (Rogers). Papilio ajax, Apr.12; Erynnis horatius, (worn), and Incisalia irus, Apr.27; I. niphon ♀, Apr.30 (unusually early dates). I. augustus was abnormally scarce, perhaps as a result of failure of 1948 wild blueberry crop. Strymon spp., Speyeria, and other midsummer butterflies were far below normal abundance. A colony of Achalarus lycidas, an unusual species in this area, was in full emergence by June 10, as compared with a late June emergence in a previous year at Johnstown, R.I.

The Johnstons reported an exceptionally poor year for most Rhopalocera, with Lycaena hypophlaeas almost absent, in contrast to 1948 abundance. Vanessa cardui, however, was very common around Boston.

NEW HAMPSHIRE (Gerould & Gottschalk). Around Hanover Danaus plexippus was unusually abundant. In contrast, Colias were decidedly below average, with philodice no more evident than the few eurytheme or hybrids. Near Jefferson Vanessa cardui was very common Aug.13-15. Oeneis jutta was said to have been chased into N.H. from the newly discovered colony in southern Maine and thus becomes a new State record.

VERMONT. Central region (Klots). A number of Erora laeta taken in two localities where careful search did not disclose it in 1948 or in the late 1930's; dates June 4-15. During the same period and on July 15-16 other butterflies were about as usual. Possible exceptions: Melitaea harrisii, a dense colony freshly emerged, June 4-15; Papilio ajax not seen in a locality where abundant in late May, 1948; 1st gen. P. glaucus perhaps commoner than usual.

MAINE (Brower). Cool, cloudy spring, followed by drought in July. Numbers of most species much depressed. The following first dates of capture are reported (unless otherwise specified, the locality is Augusta): Colias philodice, Apr.30, (very scarce

in Sept., none June-Aug.); Pieris rapae, May 5; Nymphalis antiopa, May 7; Papilio ajax, May 11; Lycaenopsis pseudargiolus (unusually scarce) and Strymon melinus (unusually common) May 14; Incisalia niphon (to June 6); Feniseca tarquinius (some worn); Boloria toddi, May 17; Phyciodes tharos (scarce all year) May 18; Papilio glaucus, Liberty, May 24; Boloria selene, Bar Harbor, May 26; Lycaena hypophlaeas (unusually scarce) and Poanes hobomok, May 30; Hesperia sassacus and Atrytone bimacula, June 2; A. ruricola, June 3; Thorybes pylades, June 4; Polites themistocles, June 13; Limenitis arthemis, Liberty, June 12; Euphydryas phaeton, June 19; Proteides clarus and Amblyscirtes hegon, June 23; Ancyloxypha numitor, June 25 (unusually common); Lycaena thoe, June 30; Lethe eurydice, July 2; Minois alope, July 9; Speyeria cybele, July 19; Nymphalis antiopa, Sept. 12; Colias eurytheme, Belgrade, Oct. 8, VERY RARE; Nymphalis j-album, one Oct.11 (no others). Many moths were recorded, of which the following are of exceptional interest: Septis commoda (new State record), Ashland, July 18; Legna perditalis (first definite State record), Princeton, July 18; Lobophora nivigerata, Mt. Katahdin, July 25; Heliomata cycladata (first State record), Gardiner, June 4. Unusually common: Phlegethontius 5-maculata; Hyppa xylinoides; Rachela bruceata; Coryphista meadii; Eudule mendica.

NOVA SCOTIA (Ferguson). Butterflies were generally common, moths in tremendous and unusual abundance. Incisalia augustus, polios, niphon, and Lycaenopsis pseudargiolus, Mt. Uniacke, May 8, and Aldershot, May 9; Oeneis jutta, Mt. Uniacke, June 3; Papilio brevicauda at 5 localities in Cape Breton in early July; only 1 specimen of Plebeius argyrognomon at Baddeck, but common elsewhere in Cape Breton, and also in Halifax Co.; Speyeria spp. were common in July, in contrast to 1948 scarcity; worn Boloria titania (= "charicles") at Parrsboro, Aug. 12; Vanessa cardui and virginiensis common in late summer after several years' absence; Polygonia and Nymphalis remained scarce. Twenty-two species of macroheterocera were added to the Province list, some of which were: Celama triquetrana; Agrotis mollis; Septis vulgaris; S. apamiformis; Elaphria georgei; Pleuroprucha insulsaria; Semiothisa gnophosaria; Anacamptodes vellivolata; Metarranthis (undetermined sp.); Catocala coccinata; Andropolia contacta; and Septis plutonia. Oporophtera brumata appeared for the first time in North America; it is established in a considerable area near Halifax, and has probably actually been present for some time; it is a pest of fruit, shade, and forest trees in Europe, and its introduction should be viewed with concern. Other interesting captures were: Homoglaea hircina, April, Metalepsis fishi, May 1, both from near Halifax; Catocala connubialis, Coldbrook and Annapolis, July 23-26; Cerma cora, Marathyssa inficita, and numbers of Cryphia pervertens and Paectes oculatrix from the Annapolis Valley; Gluphisia avimacula in numbers at Centreville; Notodonta simplaria, Centreville, June 4; Hemaris gracilis, Southampton, Aug.6.

NEW BRUNSWICK. Southeastern portion (Ferguson). Boloria titania (= "charicles"), Dorchester, Aug.5-11; Polygonia progne and faunus same locality and dates; also Sphinx kalmiae, Rhodophora florida, etc.; Strymon acadica, near Moncton, early August.

Northern portion and Gaspé region of Quebec (Ferguson and Klots). In latter half of July Boloria selene was abundant and worn; Plebeius saepiolus was common; Boloria titania was abnormally scarce on the Cascapedia road, in contrast to 1948. At Bathurst, Aug. 2-4, Lycaena dorcas could be taken at the rate of 100 per hour; Coenonympha inornata was absent. A few miles to the south, Boloria titania was abundant; also present were Colias interior, Speyeria atlantis, Nymphalis milberti, Boloria selene, and single Polygonia gracilis and Strymon liparops. Autographa octoscripta and Hydriomena furcata were taken at light at Bathurst.

QUEBEC. Granby (Bro. Adelphe). Butterflies were abundant. Species taken in Aug., in order of decreasing abundance: Vanessa cardui, Danaus plexippus, Speyeria aphrodite (mostly fresh), Colias eurytheme (from Aug.5), Boloria selene (1 worn specimen Aug.8, numerous fresh ones after Aug.16), Lycaena hypophlaeas (common after Aug.9), Speyeria cybele (up to Aug.16, mostly worn), Vanessa virginiensis (from Aug.6 on), Phyciodes tharos (from Aug. 8 on, mostly after Aug.13), Colias philodice, Minois alope (worn) and Boloria toddi (equal), Limenitis archippus, Nymphalis milberti, About 1200 moths were taken in the same period, including several melanic Septis arctica.

Montreal region (Gray, Munroe, Sheppard). Lepidoptera were much less abundant in open areas than in 1947 or 1948, but were normally abundant in low-lying, wooded places. Some representative dates are: Vanessa atalanta, Apr.3, present in moderate numbers through the spring; Lithophane unimoda, Apr. 13, new generation abundant in Oct.; Caenurgina sp., abundant May 5; Zale sp., May 7; Diacrisia virginica, May 14 to Aug., without evident break; Xanthorrhoe lacustrata and Simyra henrici, May 16; Papilio glaucus, May 17 (about 3 weeks ahead of normal); Gabarasa ambigualis, June 1-5; Autographa falcifera, June 2-9, late July; Phlegethontius 5-maculatus, June 12 to July 3 and Sept. 2 to 27; Euclidina cuspidea, June 3-19; Phragmatobia fuliginosa, June 4 and July 17-29; Hyphantria textor, June 4-13; Chytolita morbidalis, June 5-29; Isia isabella, June 6-24; Gluphisia septentrionalis, June 8-13 and July 29; Dyspteris abortivaris, common about June 10; Euchlaena serrata, June 9 to July 15; Lacinipolia lorea, June 9-21; Minois alope, June 11 to July 16, common; Arzama obliqua, June 12; Habrosyne gloriosa, June 13-21, common, a second generation late in July; Nymphula obscuralis, June 18-26, common; Prionoxystus robiniae, about June 19, common; Plusiodonta compressipalpis, June 19 and July 27-29, common; Parallelia bistriaris, June 20 and Aug. 2-9; Schoenobius sp., June 22; Septis arctica, June 26-29 (unusually early); Lycaenopsis pseudargiolus, very common from June 28 to July 16 and from Aug. 12 to 22, the spring generation was, however, scarce; Epizeuxis lubricalis, July 2 to Aug. 3; Lethe eurydice, common in early July; Pieris rapae, scarce in spring, but abundant July 4 to Oct. 10; Papilio ajax, last. gen. scarce, but 2nd gen. common July 16 to Aug. 28; Colias eurytheme, July 16 to Nov. 2, scarcer than philodice until Oct., when it became more abundant; Colias philodice, July 16 to Nov. 2; Crymodes devastatrix, July 16 to Aug.18, very common; Polygonia interrogationis, July 20 to

FIELD SEASON SUMMARY 7. NORTHEAST - cont.

Aug.16, common (usually rare or absent in this region); Catocala crataegi, July 25 to Aug.9, common and rubbed; C. unijuga, July 25 and Aug.2; Peridroma margaritosa, Aug.12-23, Oct.6-16, very common; Catocala cerogama, July 30 to Aug.4, common, a melanic taken; Amphipyra pyramidoides and A. glabella, both common about July 30; Agroperina helva, July 30 to Aug.5, common; Vanessa virginiensis, July 31 to Sept.7, common; Everes comyntas, Aug.2 to Sept. 11, common; Catocala parta, Aug.2 to 4, a melanic taken; C. concumbens, Aug.2-31, the most numerous species of the genus; Euxoa messoria, very common in Aug. (in contrast to 1947 and 1948); Leucania unipuncta, Aug.2 to Oct. 10, extremely abundant, comprising 90% of the specimens on Professor Gray's bait line; Ancyloxypha numitor, common Aug.7-10; Eurois occulta, Aug.12-23, very common; Speyeria cybele, a male on Aug.28, an unusually late date; Nymphalis j-album, Sept.2; Lithomoia solidaginis, Sept.11; Xanthia lutea, Sept.11-21; Nymphalis antiopa, Sept.11; Xylena nupera, Oct.11; Ctenucha virginica, Oct.27 (an unusual date); Erannis tiliaria, common about Oct.29; Oporophtera bruceata, Oct.29 to Nov.16. Unusual records were: Deidamia inscriptum, St. Anne de Bellevue, April 20; Strymon melinus, St. Anne de Bellevue, Aug.14, ? new record for the Province; Anticarsia gemmatilis, Oct.11; (all Professor Gray). Sheppard records a massive flight of Acentropus niveus at Montreal, Aug.6; over 100 specimens were taken at light at his home on that night, and many more were seen; none were seen on the following night, and the species did not reappear; this locality is about three miles from the nearest likely breeding ground.

Montebello region, early July (Munroe). Lepidoptera were very numerous; small quadrifid noctuids were abundant in the daytime in undergrowth of rich deciduous woods. No specific records available.

Mont Tremblant region, late June (Munroe). Lepidoptera were abundant, the usual run of seasonal species being present. The most common diurnals were Papilio glaucus (in expected numbers) and Limenitis arthemis (in massive and unusual abundance). Danaus plexippus was also numerous at this time.

Shawinigan Falls region, latter half of July (Munroe). Lepidoptera were in at least normal abundance, with species at about normal dates. Euxoa spp., esp. ochrogaster, were more common than for the past three years, though far from maximum abundance. Small, pale brown coleophorids were very numerous.

Chateau Beaumont region, Laurentide Park, early August (Munroe). Lepidoptera were very abundant, as is the rule in this area. The most common species of diurnals were Boloria titania (= "chariclea") (swarming everywhere in the dwarf birch-caribou moss areas), Plebeius argyrognomon, Colias interior, Pieris rapae, Polygonia faunus, and Vanessa cardui, the last in shockingly worn condition. This part of the Park, which has not been collected previously, is at an altitude of between 2500 and 3000 feet, and has vegetation of a Hudsonian facies, although Dr. Yves Desmarais states that the climax appears to be Canadian. Moths were very abundant, especially a number of species of Tortricoidea. One Coenonympha inornata was taken, a new record for the Park.

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8. FAR NORTH - ALASKA TO LABRADOR

by T.N. Freeman
Ottawa, Ontario

It was pointed out in the Summary for this region last year that season to season summaries for any one locality are usually impossible because those areas are not visited more than once. However, the following notes may be of general interest.

The lepidopterous highlight of this area undoubtedly was the widespread occurrence and unprecedented abundance of hordes of Vanessa cardui from the southern tip of James Bay north to Port Harrison on the barren lands of the east coast of Hudson's Bay. It was also abundant at Churchill and according to Dr. Gottschalk a ♀ was found at Chesterfield Inlet, Keewatin, N.W.T., on July 27. It was also abundant in Newfoundland and when we consider that this species cannot overwinter in Canada, except perhaps in the extreme southern portion of Ontario, its northern migrations extended for at least 1000 miles. The following are some general notes pertaining to specific localities.

DAWSON, YUKON TERRITORY

Paul F. Bruggemann furnished the following remarks on this locality. With some exceptions, Lepidoptera were few in individuals of any one species. This may have been due to the unusually wet season. It was noted that many of the species which are common in the northern Canadian prairie region, were also taken at Dawson. Papilio glaucus was quite abundant below 3000 feet elevation, above which Papilio machaon aliaska was fairly abundant and ovipositing on Artemisia arctica.

NORMAN WELLS, N.W.T.

This locality approximately coincides with Kirby's old type locality, "Lat. 66". In general, the lepidopterous fauna is mainly characteristic of that of the coniferous forest zone, with a few arctic intrusions. Colias and Bolcria were the most abundant

FIELD SEASON SUMMARY 8. FAR NORTH - concl.

in number of individuals although species were few. The genera represented were Coenonympha, Limenitis, Phyciodes, Nymphalis, Anthocharis, Pieris, Lycaena, and Lycaenopsis.

YELLOWKNIFE, N.W.T.

Yellowknife is on the North Arm of Great Slave Lake. The lepidopterous components of the fauna are those indigenous to the coniferous zone plus a few arctic intrusions. Euchloe ausonides, Pieris napi, Colias christina, Oeneis jutta, and O. chryxus caryi were the most abundant butterflies.

MOOSE FACTORY, ONTARIO

This locality is situated at the southern end of James Bay. The survey parties were there only for a short time en route to stations along the west coast of James and Hudson's Bay. Pyrausta nubilalis and Celerio gallii were noteworthy captures. Leucania unipuncta was abundant at light on 11 September.

RUPERT HOUSE, QUEBEC

Inclement weather along the whole western coast of James and Hudson's Bays reduced the collecting. Papilio machaon was taken and verifies Holland's record for Rupert House. Vanessa cardui was abundant. One Danaus plexippus was captured. This is well south of the tree limit; no arctic species was seen.

GREAT WHALE RIVER, QUEBEC

This locality lies in the Transition Zone and the Lepidoptera consist of arctic and coniferous zone species. Oeneis taygete was the most abundant and all other indigenous species were rare. The intrusion of the southern Vanessa cardui was striking. As many as 200 specimens could be seen at one time, in late June. The larvae occurred literally in hundreds of thousands, feeding on yarrow and tansy, and many of the larvae were eaten by Pipits and Horned Larks. Many fell from the food-plants and became trapped in sand-pits. The larvae pupated in mid-August and began to emerge at the end of the month. Pupae sent to Ottawa emerged until September 20. Peridroma margaritosa and Nomophila noctuella were significant moth records for this locality.

PORT HARRISON, QUEBEC

This locality, well within the barrens, had the usual Boloria, Oeneis, Colias, and Erebia in limited numbers. Vanessa cardui arrived in late July but apparently did not find a suitable food plant.

NEWFOUNDLAND

In the western part Boloria and Oeneis were absent, Colias scarce, Blues and Coppers abundant in certain habitats. In the eastern part Pieris rapae was abundant in an area deep in the woods and cleared of timber thirteen years ago. Papilio glaucus and P. brevicauda were also numerous. Danaus plexippus occurred at St. Johns. Coenonympha inornata and our old friend Vanessa cardui were abundant generally in Newfoundland.

Contributors: P.F. Bruggemann; C.W. Gottschalk.

BOOK REVIEWS. 16. A Manual of the Butterflies and Skippers of Kansas,* by William D. Field

Mr. Field, now an Associate Curator of Insects at the United States National Museum, wrote in the preface to his Manual: "Many students of nature would like to be able to determine their own finds. It was with this in mind that the simple faunal list was enlarged into a manual with complete keys to the various families, genera and species. The intention has been to eliminate from the manual as much technical language as possible, in order to make it more easily usable to younger and inexperienced collectors. ... A rather lengthy introduction has been included to prepare the beginning student for an intelligent use of the subject right at the start, and also perhaps to arouse his interest. ... References are placed in the footnotes so that the student who may find some particular interest in the several subjects discussed can make further studies."

The first section succeeds exceptionally well in introducing to the untrained enthusiast the serious study of butterflies, with discussions of nomenclature, classification, the structure of each life history stage, migration, butterfly senses, and other subjects. A serious deficiency here is the lack of a biologically tenable, modern discussion of subspecies and of individual and seasonal variants. That such an omission would be unlikely today emphasizes the recentness and yet tremendous impact of the superb theoretical treatments of the "New Systematics" by Mayr, Huxley, Dobzhansky, Simpson, and many others. In the body of the Manual the descriptions, all of which appear to be newly prepared, are simple and lucid. For ease in handling the necessary technical terms there is an extensive glossary.

A distinctive feature of Field's book is the regular use of keys for identification of superfamilies, families, genera, and species, as well as a few to subfamilies and tribes. How most butterfly-book writers have so long neglected the invaluable technique of identification keys is a curiosity.

The Manual includes detailed characterizations of the adults, pupae, and larvae of all higher groups. Under each species in addition to the description, there are notes on distribution, flight periods in Kansas, host plants, and references to figures in the standard books by J.H. Comstock, Holland, Clark, and J.A. Comstock. A real disappointment to the reviewer was the large amount of space devoted to aberrations and forms, a disappointment heightened by the lack of genetical interpretation of these phenomena which are essentially the province of genetics rather than taxonomy and nomenclature.

These shortcomings are perhaps the product of the date of preparation and could be raised equally for virtually all other Lepidoptera manuals preceding this one by Field. Its originality and thoroughness make this a book valuable for frequent reference for the specialist as well as the collector for whom it was intended.

C.L. Remington

*Bull.Univ.Kansas, vol.39,no 10: 327 pp.,2 pls. 1938.

AVAILABLE NOW FREE OF CHARGE. Merely write: Prof. C.D. Michener, Dept. of Entomology, University of Kansas, Lawrence, Kansas.

ANNUAL MEETINGS OF A.A.A.S. AND ENTOMOLOGICAL SOCIETY OF AMERICA

The 1949 meetings of the E.S.A. were held at Tampa, Florida, December 13-16. As usual, there were papers on the program of lepidopterological interest, primarily in a symposium on Entomology and Zoogeography. Dr. Charles D. Michener discussed "Geographical Isolation and Speciation", and Dr. Alexander B. Klots presented a paper on "Circumpolar and Alpine Distribution of Butterflies."

University duties kept the writer from attending the E.S.A. meetings at such inconvenient dates, but the societies meeting with the American Association for the Advancement of Science had several papers of exceptional interest this year. The A.A.A.S. met in New York City December 26-31, and readers of the Lep. News may be interested in some selections from the program.

Of outstanding interest was a symposium on "The Role of the South Atlantic Basin in Biogeography and Evolution with Special Emphasis on the History of South America During the Mesozoic Era." It was arranged by the thriving new Society for the Study of Evolution and was presided over by Dr. Ernst Mayr. Of course, the central theme was the Wegenerian Hypothesis of Continental Drift (Wegener tried to show that South America and Africa, as well as other land masses, had once been connected along the sides now forming the shores of the South Atlantic Ocean and that the continents had drifted apart rather rapidly during Mesozoic times). Nine formal papers and about the same number of arranged discussion papers were read by a galaxy of noted physical geologists, paleontologists, botanists, entomologists, and vertebrate zoologists. Thus, fresh, authoritiative approaches to the problem were made from very many points of view. While no one officially attempted to arrive at a conclusion after the papers and discussion, the writer went away thoroughly convinced that there was hardly a shred left to support those who accept the essentials of the Wegenerian hypothesis and that virtually conclusive evidence was presented, particularly by the geologists, that large-scale Continental Drift did not occur. Also, apparently a trans-Atlantic land-bridge eastward from Brazil to Africa has little or no support today and only passing reference was made to such a bridge. Incidentally, few if any Lepidoptera could be expected to throw much light on Drift or land-bridges, since almost any modern Lepidoptera occurrence in South America and Africa could be explained on the basis of transportation of pioneers by wing and wind.

Two papers on Lepidoptera were listed in the Evolution program, one by Prof. Ernst Caspari on "Effect of two alleles occurring in natural populations on viability in Ephestia" being read by title only and presumably appearing in print soon. The other, by the writer, was on "Evidence on species separation in the lepidopterous genus Colias", and known facts were reviewed, in combination with new ones, to show that eurytheme and philodice are separate, frequently hybridizing species of Colias.

Prof. Caspari also had a paper on Lepidoptera on the program of the Genetics Society of America, entitled "Serolcgical Differences between a^+a^+ and aa Ephestia."

The 1950 meetings will be held in Cleveland, Ohio, after Christmas, but a number of biological societies will probably meet separately in Columbus, Ohio, in September. The plans of the E.S.A. are not yet known to the writer.

C.L. Remington

PERSONALIA

Prof. RENÉ LICHY, Caracas, Venezuela, returned this fall from an extended trip to Europe. He wrote enthusiastically of the kind attention he received, particularly from Mr. N.D. Riley, Dr. Karl Jordan, and MM. J. Bourgogne and P. Viette, during research visits to the British Museum, the Tring Museum, and the Muséum National d'Histoire Naturelle in Paris. He was able to examine to his satisfaction the Felder types of Eurema and of Amblypterus tigrina.

ARTHUR D. HALL, a Charter Member of the Lepidopterists' Society, died in Camp Hill Veterans Hospital, Halifax, Nova Scotia, on 31 December 1949. He was 78 years old. Born in England, Mr. Hall emigrated to Canada just after the First World War and lived for a time in Ontario before moving to Great Village, Nova Scotia, his home for several years. He was a keen moth collector in England as well as in Ontario and Nova Scotia. The Hall collection and small library were bequeathed to Mr. H.G. Payne, Provincial Apiarist, Truro, N.S.

CLAUDE I. SMITH, a Charter and Sustaining Member of the Lepidopterists' Society, was drowned in a fishing accident in San Francisco, California, 4 November 1949. Mr. Smith, only 27 years old at the time of the tragedy, was a student of entomology at the University of California and was working there on a revision of the noctuid genus Annaphila. He was married and the father of two small boys. Mrs. Smith turned over to the University his notable collection of western North American moths.

The Autumn, 1949, issue of American Scientist reports that KENT H. WILSON, studying at the University of Idaho, received a substantial grant "to aid in a study of the two species of the Glaucus group, Papilio glaucus Linné and Papilio rutulus Lucas."

Prof. K.J. HAYWARD, who has returned to Argentina from his lengthy stay in England, notified us that the second volume on the Hesperiidae of Argentina was in the printers' hands in October. As a result of his very successful trip, he now has assembled a complete synonymic list of the Argentine butterflies, with 748 species and subspecies.

Dr. EUGENE MUNROE has accepted a position with the Systematic Entomology Unit, Division of Entomology, of the Canadian Department of Agriculture, in Ottawa. This Unit apparently now has the largest staff of lepidopterists in the Western Hemisphere. It long was a distinguished center for Lepidoptera research with the presence of Dr. J.H. McDunnough, who retired from the Unit three years ago.

AN ECONOMICAL STORAGE-BOX

by P.H.H. Gray
Macdonald College, Quebec

A light (weight 2 lbs.) but strong storage-box for pinned insects can be made easily and at a very small cost, with the materials listed below and in the manner described. The boxes are in book-form. They measure 16" x 12", are 3 7/8" thick, and require 17" of shelf depth. Each will hold about 250 noctuid-sized moths, or about 100 of the Nymphalis type. One box requires the following materials, or pro rata as stated:

4 pieces 3/8" thick basswood, 1 3/4" x 16"
4 pieces 3/8" thick basswood, 1 3/4" x 11 1/4"
2 pieces box pasteboard 12" x 16", for covers
4 pieces liner pasteboard 11 1/4" x 15 1/4", for the pinning medium (see notes below)
White paper to cover the liner
13'4" passepartout (picture-binding) 7/8" wide (or 3 1/2 rolls of 10 yards for 9 boxes)
3 tubes "Glyptal" Gen'l Purpose Cement for 9 boxes
1 tube "Duco" Household Cement for 9 boxes
20 small flat-headed nails, 5/8" long
16 small picture (French) nails, 7/8" long

I get the wood strips sawn for me in 4'1" lengths, and cut them to the box lengths, sanding all open ends. I have a squaring-up frame of flat strips of wood nailed to a 12" wide ironing board (retired household property!) to accomodate the 12" x 16" dimensions of the box. The two 16" and the two 11 1/4" basswood strips are "Glyptaled" at the ends and nailed together in the squaring up frame with two 7/8" nails at each butted corner.

A very sharp knife is needed to cut the pasteboard (you could have it cut at a factory). The 16" x 12" cover-pasteboard is then glyptaled onto the edges of the box-frame and tacked down with the 5/8" flat-headed nails, as far down as slightly to depress the edges or corners of the pasteboard. A duplicate of this makes the other half of the box.

A double layer of liner pasteboard is glyptaled into each half-box, spotting the adhesive only enough to hold the two pieces firmly. You can use the flat grey-coloured liner or corrugated pasteboard; the latter must be stuck together "hill-to-valley", the kind with the hills 3/8" apart. Heavy weights are needed to stick these together and to the cover. White paper is "ducoed" sporadically and weighted down on the liner. "Glyptal" seems to be too tough for pins 1 and 2 to penetrate. These two cements appear to contain amyl acetate; they repel psocids (book-lice) for at least six months. Glyptal is made by Canadian General Electric, Duco by Canadian Industries Ltd. Similar adhesives can be obtained under other names in other countries.

All open ends and edges are covered with passepartout folded over. The two half-boxes are now placed side to side, covers undermost, and a strip of passepartout stuck along the adjacent edges to form an inner hinge. When this is dry the two halves are folded together, closing the box; it is then placed on its front edge, and another strip of binding paper stuck along the back joint completes a double hinge. The box is now ready for use. You can add inner strips of basswood, to project on three sides of one half, with the exposed edges rounded for half their depth, to make a closer fit. I do not add a hook or catch.

If the wood strips are less than 1 3/4" wide the pin heads protrude when the box lies open flat. Since specimens are pinned into both halves, you may have pin heads through your larger moths and butterflies if you use 1 1/2" wood.

It takes about two hours to make one box. You may save time but spend more money by having ready-cut pasteboard. These boxes are for the far-from-rich enthusiast. I made nine boxes last winter for about 85 cents each, the pasteboard costing nothing.

THE NOMENCLATURE CONTROVERSY

A group of taxonomists in Washington, D.C., has published a statement (Science, vol.110: p.595; 1949) about the much-discussed nomenclatural events at the 1948 international zoological congress. It is intended to remedy the fact that "the basic issues have not been sufficiently emphasized." (See Lep. News 3: pp.19-20, 67). After the events are reviewed briefly, the statement is continued as follows:

"The following facts stand out as the basic issues: (1) the most momentous actions of a half-century in zoological nomenclature were taken at Paris without preliminary announcement, without the usual opportunities for consideration by zoologists in general, and without prior study and approval by the regular commissioners; (2) in many cases approval was given only "in principle," with no provision for review of the principles and with the actual wording left to a committee of jurists; (3) not only was no provision made for review of these principles, but no right was reserved for the regular commission, the international congress, or zoologists to accept or reject the final wording of the proposed revision or any of its parts before promulgation.

"It is clear that the program which produced these issues was created and fostered by the secretary of the commission, who no doubt believed that his actions were desirable and necessary to improve the nomenclatural situation. Nevertheless, shorn of all obfuscations regarding 'mandates from the congress,' dangers of delay, and similar assertions, the means taken to effect the ends are contrary to the principles and practices on which international cooperation in nomenclature was established and by which it has functioned for nearly half a century.

"Such actions strike at fundamentals. If they are allowed to stand, international cooperation in nomenclature will be a farce, the confidence upon which support of the commission has been based will be lost, and the accomplishments of years in the field of zoological nomenclature will be jeopardized.

"If confidence is to be maintained and international cooperation made secure, any plan for revision of the code must have widespread approval. Zoologists must be permitted to see any such proposals and express their reactions, the full commission must study all proposals, as well as the comments of zoologists, and pass judgment on them, and, if it still seems desirable to maintain the formality, the following International Congress of Zoology must formally approve the final draft."

PROGRESS REPORT ON THE NEARCTIC BUTTERFLIES

The second lot of distribution data sheets are all in and consolidated. These cover the first ten Satyridae in McDunnough's 1938 Checklist plus Neonympha dorothea Nabokov published since that year. Reports were filed by 63 collaborators. Some of these reports included data from museum collections and others from State and local lists. Such additional information is most welcome.

The annexed table shows the distribution of the species involved by the number of counties in each Province and State from which specimens were reported. Those members who are not collaborators are urged to study the list in connection with their own records. If any of you can add information please send it to me. All additional records will be welcome but we are most anxious to get more data from States where less than 20% of the counties are included in the table. Certain States are noticeable by their absence (Delaware) or very scant data (Indiana). Surely someone has material from them!

Will some Canadian member please inform me of the number of counties or parishes in each of the Provinces? I would appreciate a reference to a list of the county names such as appears in the World Almanac for the States.

Three records in the table need verification: Megisto mitchellii from New Jersey is based upon an old record of one specimen identified by Skinner and never again found; M. eurytus from Arizona and Idaho, each based on single specimens, the former in the Los Angeles Co. Museum, the latter in Dr. Chermock's collection with no other locality than "Idaho."

The third series of data sheets, for Satyrodes, Coenonympha, and Eumenis, has been mailed. Any collaborator who has not received them should notify me immediately. If members of the Society would make county-by-county censuses of Satyridae this season it would add greatly to the value of the final distribution maps to accompany the NEARCTIC BUTTERFLIES.

In the task of preparing the summary of distributional data for each species for THE NEARCTIC BUTTERFLIES it is necessary that I check as many as possible of the published State and local lists of butterflies. Will the members of the Society please do this for me: 1) send me references to every such list for the States with which they are familiar with a comment on the completeness of the list as far as they have been able to verify it; 2) the references for any other lists of which they have knowledge; 3) copies of any lists that they may have in duplicate.

F. Martin Brown, Coordinating Editor
Fountain Valley School, Colorado Springs, Colo.

PROVINCE OR STATE	NUMBER OF COUNTIES	E. PORTLANDIA	E. CREOLA	N. GEMMA	N. HENSHAWI	N. DOROTHEA	N. PHOCION	M. MITCHELLI	M. HERMES	M. EURYTUS	M. RUBRICATA	P. XICAQUE	% COUNTIES REPORTED
MANITOBA		8								4			
NEW BRUNSWICK		2											
NOVA SCOTIA		5											
ONTARIO		8								10			
QUEBEC		5								5			
ALABAMA	67	2	2	4			5		5	4			7.5
ARIZONA	14				2	6			4	1	6	1	57.
ARKANSAS	75	1	1	5						4			6.5
COLORADO	63				1	2							3.2
CONNECTICUT	8	1								4			50.
FLORIDA	67	3	2				14		9	3			21.
GEORGIA	159	1	4	3			1		4	1			3.4
ILLINOIS	102	8	2	1						5			7.8
INDIANA	92	1											1.1
IOWA	99	2								3			3.0
KANSAS	105	3	1	1						7			8.7
KENTUCKY	120	3		5					2	5			4.2
LOUISIANA	84		1	2			1		3	1			4.7
MAINE	18	7								5			44.
MARYLAND	24	1								3			12.5
MASSACHUSETTS	14	6								10			71.
MICHIGAN	83	9						4		10			12.1

PROVINCE OR STATE	NUMBER OF COUNTIES	E. PORTLANDIA	E. CREOLA	N. GEMMA	N. HENSHAWI	N. DOROTHEA	N. PHOCION	M. MITCHELLI	M. HERMES	M. EURYTUS	M. RUBRICATA	P. XICAQUE	% COUNTIES REPORTED
MINNESOTA	62	15								11			24.
MISSISSIPPI	82	1					1		3				3.7
MISSOURI	115	5								3			4.3
NEBRASKA	93	2								1			2.1
NEW HAMPSHIRE	10	3								6			60.
NEW JERSEY	21	5					4	1?	1	4			24.
NEW YORK	62	14								23			37.
NEW MEXICO	31					3							9.7
NORTH CAROLINA	100	3	2	2			3		2	3			3.0
NORTH DAKOTA	53	1											1.9
OHIO	88	11		2				1	1	10			12.5
OKLAHOMA	77			1					1	1	1		1.3
PENNSYLVANIA	67	8								6			9.0
RHODE ISLAND	5	1											20.
SOUTH CAROLINA	46	2	1	2			2		2				4.3
TENNESSEE	95			2			1			2			2.1
TEXAS	254			7		2			11	6	7		4.3
VERMONT	14	3											21.
VIRGINIA	100	12	8	10			6		24				
WEST VIRGINIA	55	4		2						3			7.3
WISCONSIN	71	8								10			14.1
IDAHO										?			

BUTTERFLY REARING TECHNIQUES AND GLOVERIA CROSSES.- Last spring and summer, while persuading butterflies to oviposit in captivity, I was amazed how well the flower-pot-and-lamp system works. After failing to obtain eggs from two ♀♀ of Pieris beckerii Edw., which I carried home in small cardboard containers in the car, I decided that they had become too hot. I took a gallon thermos jug with ice cubes in it on my next collecting trip. I placed the ♀♀ in gauze-covered cartons that fit inside a tin can, which was suspended by a wire into the partially melted ice. The butterflies were quiet on the way home, and laid many eggs in captivity. This method has worked successfully on Melitaea wrightii Edw., M. gabbii Behr, Speyeria macaria Edw., S. callippe comstocki Gund., Phyciodes mylitta Edw., Limenitis lorquini Bdv., and Lycaena gorgon Bdv.; all laid numerous eggs. One S. callippe comstocki laid 190 eggs on dry violet leaves. The young larvae hatched, ate their egg shells, and went into hibernation immediately. The last of 32 L. lorquini larvae finished its hibernaculum December 1st.

Minois silvestris Edw. and Coenonympha california West.& Hew., collected in our patio, refused to lay eggs with a 40-watt bulb over the flower pot but soon began to oviposit when I switched to a 25-watt bulb. After devouring their egg shells, the newly-hatched C. california hibernated.

A Heterochroa bredowii californica Butl. laid only one egg. The larva is so different from L. lorquini that it doesn't seem reasonable to me to classify both species in the genus Limenitis as has been done in the recent revision.

During September numerous Gloveria gargamelle medusa Stkr. ♂♂ were attracted to ♀♀ in my house almost each day between 10 a.m. and 2 p.m. A ♂ medusa mated with a ♀ G. arizonensis Pack. and a ♀ medusa with a ♂ arizonensis. Both crosses produced infertile eggs.

William H. Evans, Sun Valley, Calif.

COCOON WITH TWO PUPAE.- In about one bushel of cocoons of Samia walkeri F.& F. collected in the city of New Haven late in January, one contained two pupae. The exterior of the cocoon was normally formed except for a slight constriction running half way around the middle. However, the silk seemed to be continuous and only one Ailanthus leaf was wrapped about the cocoon. On the inside the external depression became a smooth ridge encircling the cell, but it was not pronounced enough to separate the two pupae entirely, for the one in the upper part had partially crushed the other. Neither of the pupae was alive although one moth had half emerged from the upper one; the lower had never developed at all. Apparently it had been partly crushed just after its formation, before hardening of the pupal cuticle. Among the other cocoons several had a few threads in common or as many as five or six were found hanging from the same branch, but none of those examined had joined the cell as well as the silk. In order to do so the larvae would not only have had to choose the same precise place but start spinning at the same time. The fact that the two pupae are in an upright position with only one opening into the cocoon suggests that the two started spinning separate cocoons and that the lower one in an attempt to keep its exit open thrust aside the threads of the other, with a single cocoon resulting.

R.W. Pease, Jr., New Haven, Conn.

The IXth International Congress of Entomology will be held in Amsterdam, Netherlands, from August 17 to 24, 1951. (The VIIIth Congress was held in Stockholm, Sweden, in 1948). Entomologists contemplating the trip to Amsterdam will receive the application forms and programs when issued if they write: The Secretariate, c/o Physiologisch Laboratorium, 136 Rapenburgerstraat, Amsterdam, Netherlands.

Prof. Ralph W. Macy, Reed College, Portland, Oregon, whose planned book on the biology of North American butterflies was reported some time ago in the Lep. News, now has a substantial portion of the manuscript completed. However, there is still very much information which he is eager to get and he has sent a letter to Society members listing the points of special interest which active field workers can in many instances provide. He is especially hopeful of obtaining numerous first quality photographs, both in black-and-white and color, of all stages in natural habitats. The publisher will pay generously for photographs accepted and full credit will be given. Since the Macy book is not primarily taxonomic, it will not conflict with other works in preparation, such as Prof. Klots' manual. It will instead be a companion volume to them. His work deserves the fullest immediate support.

Hugh B. Leech, curator at the California Academy of Sciences in San Francisco, has sent us a number of separates of two of his short papers on Lepidoptera. These are available on request from the Associate Editor of the Lep. News.

1. "The Occurrence of a Hollyhock-Seed Eater, Noctuelia rufofascialis, at Vernon, British Columbia." (Proc. Ent. Soc. Brit. Columbia, 1949).
2. "Flights of Nymphalis californica Bdv. in British Columbia and Alberta in 1945." (Can.Ent.,1945).

Prof. Dr. HERMANN WEBER, the celebrated German entomologist best known internationally for his excellent textbook, Lehrbuch der Entomologie, is preparing a second edition of the Lehrbuch and has sent out a request for reprints on entomological subjects. He writes: "During the war I have lost my library, my collection of zoological papers and all my other possession. ... The conditions of public libraries in Germany are rather bad and will stay so for some time; at Tübingen foreign literature is scarcely available." His address is:

Prof. Dr. Hermann Weber
Zoölogisches Institut
Hölderlinstrasse 12
(14b) Tübingen, (French Zone) GERMANY

At least the first 20 pages of the "Service Directory" have been issued by S.C. Carpenter, Box 1344, Hartford, Conn. The Directory is mimeographed and is a list of dealers of scientific supplies, arranged alphabetically by objects sold. While it is very incomplete, all potential purchasers of such supplies will undoubtedly find many useful references to dealers.

BRIEF BIOGRAPHIES

20. Jacob Hübner (1761-1826)

In 1937 Francis Hemming, of London, published the results of an intensive and complete study of the entomological works of Jacob Hübner and settled so far as possible the doubtful dates of Hübner's publications. The tremendous zoological importance of a work of this kind testifies to the major position of its subject, for the dates of Hübner's works affect the validity and use of a large portion of generic names of Lepidoptera. Mr. Hemming's book*, contained in two large volumes, is an exceptionally fine piece of bibliographical research, and we are indebted to him and to the Royal Entomological Society of London for kindly giving permission to draw on the book for the material in this brief survey of Hübner's life and work, and to reproduce the photograph above.

Jacob Hübner was born in Augsburg, Germany, on June 20, 1761, just three years after the publication of Linnaeus' tenth edition of Systema Naturae, a foundation-stone on which Hübner was later to build. Little is known about his early life. As a young boy he apparently excelled in school work, being especially talented at drawing. He was a keen observer of anything strange or interesting, and recorded his views in sketches. This may have introduced him to the world of insects. Upon completion of his schooling, he was apprenticed to an etcher or designer in the town. Augsburg was a cotton-weaving center, and the production of new prints was a special pride. Hübner proved successful in this work and obtained a good position at the conclusion of his apprenticeship.

Hübner's interest in natural history probably emerged in his late teens or early twenties. In 1784 he made his first attempts at copper plate illustrations of Lepidoptera, thus beginning a career that produced an unbelievable number of masterfully executed plates of Lepidoptera. In 1785 his first publication appeared - sixteen pages and three plates of new and little-known species of Lepidoptera. In 1786 he began publishing the Beiträge zur Geschichte der Schmetterlinge on the early stages of Lepidoptera, a pioneering emphasis on life history, and by 1790 two illustrated volumes had appeared.

A chance for the broadening of his entomological, as well as artistic, interests came when in 1786 he went to Niemierow, in the Ukraine (Russia) as a designer at a cotton factory. While there he did much Lepidoptera collecting and made a list of Ukrainian butterflies (never published). On the journey to and from Niemierow he was able to meet some foreign entomologists and inspect their collections and libraries. In 1789 he returned to Augsburg to continue his profession.

He made a small diversion into ornithology in 1793 with the publication of a work on birds and Lepidoptera. In later years he also wrote on such varied subjects as American Agaves, Bavarian land snails, and the city of Augsburg, but his work on Lepidoptera received the major part of his attention. At intervals of a few years appeared: the beginning of a synonymic catalogue of the Lepidoptera of the world; a large "monograph" of early stages of European Lepidoptera entitled Geschichte europäischer Schmetterlinge (1793), which contained at its conclusion 500 plates; and the initial parts (1796) of his great illustrated work on European Lepidoptera, Sammlung europäischer Schmetterlinge, with a total of 700 plates.

In 1793 Hübner married an Augsburg woman, Maria Domanal, and they enjoyed an unusually happy domestic life, unmarred except by the unavoidable misfortunes of war-produced financial troubles. After his marriage, Hübner evidenced a new spirit of confidence and vigor which is apparent in his work. There was one child of this marriage, a daughter, who affectionately cared for her father after the great sorrow of his wife's death about six years before his own, which occurred on September 13, 1826.

The famous and controversial Tentamen, a small pamphlet containing Hübner's new suggested classification for Lepidoptera, was distributed to his friends in 1805, though never "legally" published. It provided for nine "Phalanges" (= suborders), divided into "Tribus" (= family), and "Stirps" (= genus), an important advance over previous groupings. Hübner's early works were based on the then-current division of the Lepidoptera into only two groups, as in Linnaeus' system, - all butterflies under Papilio and all moths under Phalaena. This was then modified in his works into subdivisions of the two groups, written with the new category name in parentheses between Papilio (or Phalaena) and the specific name. As his work progressed this was modified also, un-

* Hemming, Francis, Hübner, A bibliographical and systematic account of the entomological works of Jacob Hübner, 2 vols. xxxiv 605 pp.; Royal Entomological Society of London. 1937.

til in 1805 the Tentamen classification was produced.

As Hübner's geographical interests and contacts increased, his broadened outlook on Lepidoptera was shown by a publication on non-European fauna - Sammlung exotischer Schmetterlinge (1806), with the classification based on his Tentamen.

His most important work, both in his own opinion and that of others, Verzeichniss Bekannter Schmettlinge [sic!], a systematic and bibliographical catalogue of the Lepidoptera of the world containing hundreds of new generic names, gave the final revision of classification with two more divisions between "Stirps" and "Genus". "The essential soundness of these categories may be judged by the fact that in its broad outlines the classification adopted in the Verzeichniss remains the classification in force to-day" (Hemming). It is small wonder that Hübner's name remains so familiar in lepidopterology of the world even today, over 145 years after the Tentamen appeared.

Jeanne E. Remington

THE ENTOMOLOGICAL WORKS OF JACOB HÜBNER

1785. Abbildungen und Beschreibungen noch nicht abgebildeter und noch unbeschriebener Schmetterlinge.

1786-90. Beiträge zur Geschichte der Schmetterlinge, 2 vols.

1793. Sammlung auserlesener Vögel und Schmetterlinge.

[1790]-[1793]. Der Schmetterlinge Lepidoptera Linnei, Europäisches Heer.

[1793]-[1842]. Geschichte europäischer Schmetterlinge.

1796-[1838]. Sammlung europäischer Schmetterlinge.

1796. Die Europäische Schmetterlinge, Gesammlet [sic!], Geordnet, und Beschrieben (modified edition of last-named publication).

1805. Tentamen (ruled never validly published, by International Commission on Zool. Nomenclature).

1806-[1838]. Sammlung exotischer Schmetterlinge, 3 vols.

1808. Erste Zuträge zur Sammlung exotischer Schmetterlinge (later, new text called Zuträge zur Sammlung exotischer Schmettlinge [sic!], 5 vols. 1818-1837).

1816-[1826]. Verzeichniss bekannter Schmettlinge(!).

1820. Lepidopterologische Zuträge.

1821. Index exoticorum Lepidopterorum.

1822. Systematisch-alphabetisches Verzeichniss aller bisher bey den Fürbildungen zur Sammlung europäischer Schmetterlinge angegebenen Gattungsbenennungen.

1823. Verzeichniss aller bisher zur Geschichte europäischer Schmetterlinge, gesammelt von Jacob Hübner, in Augsburg, erschienenen Blätter der Larvae Lepidopterorum.

[1825]. Catalogue des Lépidoptères qui composent la Collection de feu Mr Franck (authorship anonymous).

REVIEW OF McDUNNOUGH'S REVISION OF NORTH AMERICAN EUPITHECIA*

The long-awaited revision of this difficult and ubiquitous genus for North America was issued on 22 August 1949 as a part of Volume 93 of the Bulletin of the American Museum of Natural History (New York). It is the culmination of a series of smaller papers on Eupithecia by Dr. McDunnough.

Only six new species are described in the present work and yet a glance at the List of Species (pp.706-708) of Eupithecia and the very closely related Nasusina and Prorella shows that there are now recognized for North America 145, 4, and 14 species, respectively, of the three genera, and 27 additional races of Eupithecia. Few genera of Lepidoptera can compare with this number of species, and Dr. McDunnough points out that there are even more Palearctic species of Eupithecia. It is remarkable that all these species are so relatively homogeneous that Dr. McDunnough, like the European specialists, has been unable to find grounds for dividing Eupithecia into smaller, more convenient genera. He even regards Nasusina and Prorella as so uncertain that he retains them as distinct genera "merely as a matter of convenience". Students of theoretical speciation may find Eupithecia particularly intriguing material, since the species must have evolved to a point of distinctness through an unusual sequence of evolutionary events as compared to other groups of winged insects, in which fewer closely related entities now occur.

Dr. McDunnough discusses the structural characters he has used for classification and shows that the most valuable are male genitalia, female genitalia, and the ciliation of the male antennae. He figures the genitalia for the major part of the species, and he presents photographs of the wing patterns of nearly all. He acknowledges the photographic aid of C.F. dos Passos, and presumably the photographic apparatus described in the Lepidopterists' News (vol.3: pp.41,42) was utilized. A particularly valuable feature of the illustrations is the inclusion of precise locality data for each figure.

The treatment of every species usually includes: 1) detailed bibliographic synonymy; 2) comparative discussion of wing pattern; 3) detailed description and notes on variations of male genitalia and female genitalia; 4) data and present location of types; 5) complete distribution; 6) all available information on life history; 7) notes on specimens figured.

The printing of the text of the revision is of fine quality and it is surprising to find the reproduction of figures rather poor. Details of the figures of genitalia are frequently badly blurred and the printing of the photographs rarely does justice to what presumably were clear originals.

The price of this important publication is stated to be $2.50 per copy. It may be obtained from: The American Museum of Natural History, Central Park West at 79th St., New York 24, N.Y.

C.L. Remington

*See Recent Lit. #270, on p.110 of this issue of the Lep. News, for complete reference.

RECENT LITERATURE ON LEPIDOPTERA

234. Antram, Chas. B., "Note on the Butterflies of the New Forest in 1949." Ent. Rec. & Journ. Var., vol. 61: pp.111-112. Nov. 1949.

235. Beebe, William, "Insect Migration at Rancho Grande in North-central Venezuela. General Account." Zoologica (N.Y.), vol.34: pp.107-110, 2 pls. 10 Aug.1949. Records vast annual migrations, mainly of Lepidoptera, through Portachuelo Pass, Venezuela. Found recurrent waves, each up to 3 weeks duration, of few species. Normal flight characteristics of any species remain same in migration. Both sexes present and ♀♀ gravid. No return flight occurs. Estimates made of 1000 per second passing through the Pass. Detailed reports to follow. (C.R.)

236. Bentinck, G.A., "Paltodora cyteisella Curt. griseocapitella nov. var." (In Dutch). Tijdschr. voor Entomol., vol.90, 1946: pp.43-44. 1 July 1949. A new variety captured in Holland much deviating from the typical form is described and ♂ genitalia figured (fam. Gelechiidae). (A.D.)

237. Blackwelder, Richard E., "Citing Literature in the Coleopterists' Bulletin." Coleop. Bull., vol.3: pp.55-59. 29 Aug. 1949. Useful guide for abbreviating titles. (C.R.)

238. Blackwelder, Richard E., "Synonyms and Genotypes." Coleop. Bull., vol.3: pp.73-75. 8 Nov. 1949. Maintains that name to be used is actually "senior synonym", name usually known as "synonym" should be called "junior synonym". Simple, clear discussion of use of generotypes (= "genotypes"), but one impractical contention: "no writer should ever describe a new species in a genus whose genotype has not been determined and is believed to be congeneric with the new species." (C.R.)

239. Borey, Paul, "Le Carpocapse des pommes, Enarmonia pomonella L., ravageur des abricots en Valais." (In French). Mitt. Schweiz. Ent. Ges., vol.22: pp.137-172, 15 figs. 30 July 1949. Biology of pomonella and control measures against it are described. (P.B.)

240. Bourgogne, J., "Note sur la systématique des Lépidoptères et création de deux superfamilies" (In French). Rev. Franc. Ent., vol.16: pp.74-77. 1949. Erects the superfamilies ERIOCRANIOIDEA, including Eriocraniidae, and CALLIDULOIDEA, including the Pterothysanidae and Callidulidae. Discusses also the other bombycid families and redefines the superfamily Bombycoidea. (P.B.)

241. Capps, Hahn W., "Status of the Pyraustid Moths of the Genus Leucinodes in the New World, with Descriptions of New Genera and Species." Proc. U.S. Nat. Museum, vol.98: pp.69-83, pls.5-10. 1948. Shows generotype of Leucinodes to be orbonalis Guen. Erects new genera NEOLEUCINODES (type - elegantalis Guen.), PROLEUCINODES (type - melanoleuca Hamps.), and EULEUCINODES (type - conifrons sp.n.). Includes in Neoleucinodes: elegantulus; dissolvens; prophetica; torvis, sp.n. (Santiago, Cuba); imperialis. Includes in Proleucinodes: melanoleuca; xylopastalis; lucealis. Includes in Euleucinodes only conifrons (Rio Morona, Peru). Removes impuralis from Leucinodes. Describes pattern and genitalia, gives host plants, distributions, and detailed figures. (C.R.)

242. Cockayne, E.A., "Arctia caja L.: its variation and Genetics." Proc. & Trans. So. London Ent. & Nat. Hist. Soc., 1947-48: pp.155-191, 2 pls. March 1949. Gives descriptions of all known local races and aberrations; describes and names 30 new aberrations, of which 18 are figured in color. Gives notes on the effect of temperature and narcotics on wing pattern development; outlines all known information on genetics of the various forms. A noteworthy paper, aside from the burden of aberration nomenclature. (P.B.)

243. Collenette, C.L., "The Lymantriidae of Bali." Entomologist, vol.82: pp.169-175, 1 pl. Aug. 1949. Lists, with notes, all species recorded (51). Describes as new: Euproctis bali; E. psammoides; E. atrisignata pega; Dura eucraera; Perina tamsi; P. kalisi, all from Bali. ♂ genitalia of all 6 figured. (P.B.)

244. Corbet, A. Steven, "The Linnaean names of Indo-Australian Rhopalocera. Part 6. The case of Papilio plexippus Linnaeus, 1758." Proc. R. Ent. Soc. Lond. (B), vol.18: pp.184-190. 17 Oct. 1949. This name is properly applicable to the oriental Danaus genutia; but recommends because of usage that it be retained for the North American Monarch. (So decided by the International Commission). (P.B.)

245. Corbet, A. Steven, "The Linnaean Names of Indo-Australian Rhopalocera. Part 7. Summary of determinations." Proc. R. Ent. Soc. Lond., vol.18: pp.191-199. 17 Oct. 1949. Includes an annotated list of all species of 'Papilio' described from this region by Linnaeus, with their currently accepted names. (P.B.)

246. Donohoe, H.C., P. Simmons, D.F. Barnes, G.H. Kaloostian, C.K. Fisher, & C. Heinrich, "Biology of the Raisin Moth." U.S. Dept. Agr. Tech. Bull., no. 994: 23 pp., 1 pl., 5 figs. Sept. 1949. Exhaustive account of distribution, habitat, habits, enemies of Ephestia figulella. Detailed descriptions and figures of ova, larvae, pupa, adult, including ♂ and ♀ genitalia, larval cranial and setal characters. (C.R.)

247. Dufrane, Abel, "Note sur les Danaidae" (In French). Bull. Mens. Soc. Linn. Lyon, vol.17: pp.192-194. Dec. 1948. Notes on range and variation of 26 spp. Names and describes 23 aberrations (including 3, WITHOUT LOCALITY, of D. plexippus). Hardly a contribution to science! (P.B.)

248. Eliot, Nevill, "The Significance of the Wing Pattern of Precis (Nymphalidae) in America." Entomologist, vol.82: pp.176-184. Aug.1949. Notes on phylogeny and zoogeographical aspects of wing pattern. (P.B.)

249. Franclemont, John G., "A New Moth on Coconut from Cuba, with Descriptions of New Genera for Related Species (Lepidoptera, Phalaenidae)." Proc. Ent. Soc. Wash., vol.51: pp.279-285, 3 pls. Dec. 1949. Erects new genera: ECHINOCAMPA (type - cocophaga, sp.n.); ELEGOCAMPA (type - Herminodes catharina); RHAMNOCAMPA (type - albistriga). The 3 plates figure the ♂ and ♀ genitalia and the wing venations. (C.dP.)

250. Freeman, H.A., "A Summary of New Butterflies from Texas." Texas Journ. Sci., vol.1: pp.40-41. 30 Sept. 1949. Abbreviated bibliography listing 40 new records and species descriptions. (P.B.)

251. Freeman, T.N., "The identity of Malacosoma fragile (Stretch) and M. lutescens (N.& D.)(Lepidoptera: Lasiocampidae)." Can. Ent., vol.81: p.233. Sept. 1949. Considers the latter name applicable to the Canadian prairie species. The author claims that the former name should be written fragile, not fragilis as it was proposed. [That is an error. Fragilis-e is a Latin adjective of the third declension. Fragilis is both the masculine and feminine, hence it must be used in connection with the feminine generic name Malacosoma, in conformity with the Article 14a of the Rules of Zoological Nomenclature.] (C.dP.)

252. Grison, P. & R. Roehrich, "Comparaison du developpement des chenilles d'Operophtera brumata L. (Lep. Geometridae) et Euprotis [sic!] phaeorrhoea Don. (Lep. Liparidae) à différentes températures constantes." Bull. Soc. Ent. France, vol.54: pp.12-16. Jan. 1949. Found both spp. developed successively more rapidly at 10°, 15°, 20°, 25°, 30°, but mortality lowest at 25° for phaeorrhoea and at 10° for brumata. 15 references. (C.R.)

253. Hardy, George A., "Notes on the Life History of Xanthorhoe defensaria Gn. (Lepidoptera: Geometridae)." Proc. Ent. Soc. Brit. Columbia, vol.45: pp.17-19. 28 July 1949. Ova from captive ♀; larvae reared on Stellaria media; total larval period (4 instars) - 34 days, pupal period - 25 days. Rearings at room temp. in winter (ova did not diapause). Suggests all named forms of defensaria are seasonal. All instars and pupa described in detail; no figures. (C.R.)

254. Harper, G.W., "Notes on a Brood of Nymphalis polychloros L." Entomologist, vol.82: pp.185-187. Aug.1949.

255. Havas, L.J.,& J. Kahan, "Hormone-Mimetic and Other Responses of the Silkworm (Bombyx mori L.) to Some Polyploidogenic Substances." Nature, vol.161: pp. 570-571, 1 fig. 10 April 1948. Reports production of morphological abnormalities by treatment with colchicine and acenaphthene, and effect of colchicine in accelerating development. (P.B.)

256. Hedges, A.V., "Technique of Breeding Lepidoptera." Proc. & Trans. So. London Ent. & Nat. Hist. Soc., 1947-48: pp.74-81. March 1949. Notes on a number of British spp.; a few "forms" seem, on the basis of breeding experience, to be distinct species. Brief summary of general technique. (P.B.)

257. Hinton, H.E., "On the Function, Origin, and Classification of Pupae." Proc. & Trans. So. London Ent. & Nat. Hist. Soc., 1947-48: pp.111-154, 39 figs. March 1949. Regards pupal stage as first imaginal instar, homologous with subimago of mayflies. The pupa is best explained as a device to permit development of imaginal muscles in a mold of same form as imago, in insects in which latter differs in form from larva. Divides pupae into 2 types: decticous, with functional mandibles for escape from cocoon (primitive), and adecticous, without functional mandibles; the latter group includes obtect and exarate subtypes. Discusses pupal evolution in many orders, especially Lepidoptera and Diptera. Again considers Micropterygidae as distinct order Zeugloptera. (P.B.)

258. Hovanitz, William, "Occurrence of Parallel Series of Associated Physiological and Morphological Characters in Diverse Groups of Mosquitoes and Other Insects." Contrib. Lab. Vert. Biol., no.32: 24 pp. Feb. 1947. Includes Colias and Euphydryas chalcedona in generalizations that related species or forms with higher metabolic rates: have greater adult activity; mate in smaller space in lab.; prefer hotter and direr environment; have less melanin; have darker pterines; are worse pest to man. (C.R.)

259. Huggins, H.C., "Two New Varieties of Peronea cristana." Entomologist, vol.82: p.156. July 1949. Two aberrations are named. (P.B.)

260. Hulls, L.G., "An Ingenious Method of Forcing Pupae Employed by Réaumur." Entomologist, vol.82: pp. 154-155. July 1949. Pupae are put in glass balls, which are then incubated by a hen. [This paper is a translation from a French memoir of 1736.] (P.B.)

261. Jacobs, S.N.A., "The British Lampronidae and Adelidae." Proc. & Trans. So. London Ent. & Nat. Hist. Soc., 1947-48: pp.209-219, 1 pl. March 1949. Excellent summary of the British species, covering imaginal characters, distribution, food plants, and larval habits. Keys to genera and species given; all (26) spp. are figured in color. (P.B.)

262. Jones, J.R.J. Llewellyn, "An Experiment with Larvae of Lambdina fiscellaria somniaria Hulst." Proc. Ent. Soc. Brit. Columbia, vol.45: p.6. 28 July 1949. Larvae of somniaria from Oak transferred to Hemlock with good results, though average size was distinctly reduced. Also found that larvae from Hemlock accepted Oak. Evidence supports Capps' sinking of somniaria and lugubrosa as races of fiscellaria (Geometridae). (C.R.)

263. Katwijk, D. van, "Overzicht van de lichtvangst van Lepidoptera in 1948" (In Dutch). Entomol. Berichten, vol.12: pp.400-401. 1 July 1949. Gives record of collecting in 1948 in Holland: at light, bad; on catkins, reasonable; on sugar, bad. (A.D.)

264. Lambert, Robert, et al, "Annual Report of the Forest Insect Survey." Dept. of Agr. Canada: 124 pp., maps. 1949. Summary of 1948 abundance and destruction by forest insects in Canada. Special attention given to Acleris variana, Hemerocampa leucostigma, H. pseudotsugata, Lambdina fiscellaria, L. somniaria, Malacosoma disstria, M. pluviale, Coleophora laricella, C.salmani, Choristoneura fumiferana, Stilpnotia salicis, Alsophila pometaria, Paleacrita vernata, Dioryctria reniculella, Rhyacionia buoliana, Anisota rubicunda, Recurvaria milleri, and others. Important for later phenological reference. (C.R.)

265. Leech, Hugh B., "The Occurrence of a Hollyhock-Seed Eater, Noctuelia rufofascialis, at Vernon, British Columbia (Lepidoptera, Pyralidae)." Proc. Ent. Soc. Brit. Columbia, vol.45: pp.25-26, 2 figs. 28 July 1949. Description of habits and of heavy infestation of hollyhocks in 1945. Drawings of adult and mature larva given. (C.R.)

266. de Lesse, H., "Hipparchia fagi Scop. et H. aelia Hoffm." (In French). Bull. Mens. Soc. Linn. Lyon, vol.17: pp.123-129. Sept. 1948. Reviews the work of Fruhstorfer and Hemming on these satyrids, and gives his own conclusions as to their status: fagi and aelia fly together over much of Europe but are quite distinct; H. ellena from N. Africa and H. syriaca from S.E. Europe and the Near East are close to H. aelia. Species distinctions are based mainly on genitalia and 'Jollien's organ' on the ♂ 8th abdominal segment, which are described but unfortunately not figured. (P.B.)

267. Lewin, Anders, "Notes on Fumea Haw. and Proutia Tutt. (Lep.)." (In English). Ent. Tidskrift, vol. 70: pp.155-170, 7 figs. 1949. Describes new subgenus ANAPROUTIA (type: norvegica Schöy) of genus Proutia. Because of aculei on forewing, claims Proutia, Masonia, Fumea, Bacotia, Talaeporia are not Psychidae but actually Tineina and form the family Fumeidae. Gives detailed figures of many structures of several spp. of Proutia, Masonia, Fumea. Maintains strongly that Fumea is not parthenogenetic, as claimed by some authors. Describes habits of many spp. (C.R.)

268. Lucas, Daniel, "Contribution à la Faune des Lépidoptères de l'Afrique du Nord." Bull. Soc. Ent. France, vol.54: p.96. June 1949. Describes as new very briefly, mainly in Latin without figures: "Pyralis Mariae Ludovicae, n.sp.", Heterographis sfaxella, 2 named varieties and 2 named aberrations, all from Tunis. The Pyralis specific name is polynomial and therefore not valid under the Règles. This paper looks like something of 1825 vintage. (C.R.)

269. DeLucca, C., "Microlepidoptera New to the Maltese Islands." Entomologist, vol.82: pp.148-149. July 1949. 12 hitherto unrecorded spp. listed. (P.B.)

270. McDunnough, James H., "Revision of the North American Species of the Genus Eupithecia (Lepidoptera, Geometridae)." Bull. Amer. Mus. Nat. Hist., vol.93: pp.533-728, pls.26-32, 20 figs. 22 Aug. 1949. Tentatively keeps Nasusina and Prorella as distinct genera. Describes as new: Eupithecia slossonata (Fla.); E. jejunata (Georgetown, Tex.); E. rindgei (Keddie, Calif.); E. redingtonia (Redington, Ariz.); E. cestatoides (Half Moon Bay, Calif.); P. ochrocarneata (Huachuca Mts., Ariz.); P. tremorata (Borego, Calif.). Figures ♂ and ♀ genitalia of most. Gives photos of 209 adults. (See review on p.108 of present issue of Lep. News.) (C.R.)

RECENT LITERATURE ON LEPIDOPTERA - cont.

271. McDunnough, James H., "A Study of the Species of the Genus Stretchia (Lepidoptera, Phalaenidae, Hadeninae)." Amer. Museum Novitates, no.1436: 29 pp., 4 figs. 21 Nov. 1949. Describes as new: S. pictipennis (Mohawk, Calif.), S. pacifica (Inverness, Calif.). Redescribes in detail, with genitalia, S. pl. plusiiformis, S. pl. coloradicola, S. prima, S. inferior, S. muricina. Figures ♀ antennae of most, ♂ genitalia of all but prima and pictipennis, ♀ genitalia of prima and muricina. (C.R.)

272. Michelbacher, A.E., W.W. Middlekauff, & N.B. Akesson, "Caterpillars Destructive to Tomato." Calif. Agr. Exper. Sta. Bull., no.707: 47 pp., 19 figs. May 1948. Brief descriptions and figures of adults, larvae, and biology in California of Heliothis armigera, H. phloxiphaga, Prodenia praefica, Laphygma exigua, Autographa californica, Keiferia lycopersicella, Gnorimoschema operculella, Phlegethontius sextus, P. quinquemaculatus. Mainly devoted to chemical control. (C.R.)

273. Michener, Charles D., "New Genera and Subgenera of Saturniidae (Lepidoptera)." Journ. Kansas Ent. Soc., vol.22: pp.142-147. Oct. 1949. Validates new names used in paper in Evolution (see Lep. News 3: p.81, #212). Large revision to appear later. In following list, types are in parentheses - ( ). Describes as new genera: CEROPODA (johnsoni sp.n.); PSILOPYGOIDES (oda); PSILOPYGIDA (crispula); GALLODIRPHIA (arpi); TRAVASSOSULA (subfumata); ADETOMERIS (erythrops); EUBERGIOIDES (bertha); AUTOMERINA (caudatula); CERODIRPHIA (rubripes). New subgenera are: of Citheronia, PROCITHERONIA (fenestrata) and CITHERONULA (armata); of Syssphinx, BOUVIERINA (högei); of Adelocephala, OITICICIA (purpurascens); of Adelowalkeria, CERATESA (hemirhoda) and SCOLESA (totoma) and MEGACERESA (pulchra) and PTILOSCOLA (lilacina); of Automeris, AUTOMERELLA (flexuosa) and AUTOMEROIDES (orneates) and RACHESA (adusta); of Automerina, AUTOMERULA (auletes); of Crmiscodes, DIRPHIELLA (albofasciata) and XANTHODIRPHIA (amarilla) and PARADIRPHIA (coprea) and RHODIRPHIA (carminata) and MEROLEUCOIDES (flavosignata) and CERODIRPHIA (rubripes). New species is Ceropoda johnsoni (Matto Grosso, Brazil). Dysdaemonia, Titaea, Paradaemonia, Arsenura placed as subgenera of Rhescyntis; Pseudohazis a subgenus of Hemileuca; Calcsaturnia and Agapema a subgenera of Saturnia; Saturnioides and Sagana "congeneric with" Copaxa; Callosamia and Eupackardia "weak subgenera of Hyalophora (= Platysamia)"; Telea a synonym of Antheraea. (C.R.)

274. Munroe, Eugene, "Some Remarks on the orithya group of the genus Junonia (Lep., Nymphalidae)." Entomologist, vol.82: pp.157-158. July 1949.

275. Murray, Desmond P., "Adela viridella Scop." Proc. & Trans. So. London Ent. & Nat. Hist. Soc., 1947-48: pp.192-193, 1 pl. March 1949. Notes. Figures all stages, especially pupa with elongate antennal cases spirally coiled about tip of abdomen; also figures ♂ and ♀ genitalia. (P.B.)

276. Niemierko, W., "Fatty Acid Metabolism in Silk Worm Larvae" (In Polish, Engl. Summ.). Acta Biol. Exper., vol.14: pp.137-150, 2 figs. 1947. Fatty acid content increases during last larval instar, but decreases about 12% during cocoon formation. Degree of unsaturation increases in both periods. (P.B.)

277. Niemierko, W., "Contribution to the Biochemistry of Metamorphosis of Silk Worm" (In Polish, Engl. Summ.). Acta Biol. Exper., vol.14: pp.151-155. 1947. 40% decrease in fat during metamorphosis; relative effects on different fatty fractions. (P.B.)

278. Percy-Lancaster, S., "The Butterfly Danaus chrysippus in Calcutta." Journ. Bombay Nat. Hist. Soc., vol.48: pp.381. Apr. 1949.

279. Picard, J., "Sur quelques Hespériides d'Afrique (Lépidoptères)" (In French). Rev. franc. Ent., vol. 16: pp.147-152, 3 figs. 1949. Describes as new: TAVETANA (type - jeanneli (British East Africa)) (venation and ♂ genitalia figured); Pelopidas rougeoti (Gaboon) (♂ genitalia figured); Xanthodisca vibius rega, form evansi (Sierra Leone). Places Celaenorrhinus bryki as a race of C. galenus. (P.B.)

280. Rindge, Frederick H., "A Revision of the Geometrid Moths Formerly Assigned to Drepanulatrix (Lepidoptera)." Bull. Amer. Mus. Nat. Hist., vol.94: pp. 231-298, 14 figs. 17 Nov. 1949. Describes as new: EUDREPANULATRIX (type - rectifascia); APODREPANULATRIX (type - liberaria) (also includes litaria); Drepanulatrix quadraria usta (Inverness, Calif.). Synonymizes ella and ida under D. unicalcararia, rindgearia under D. hulstii verdiaria, pulveraria under D. foeminaria, lutearia under D. c. carnearia, californiaria and ferruginosaria under D. monicaria, and helena under A. liberaria. Places as subspecies verdiaria under D. hulstii, ruthiaria under D. bifilata, columbaria under D. carnearia. Redescribes in detail all other species and races listed in the 1938 McDunnough Check List. Gives keys to adults, ♂ genitalia, ♀ genitalia, and larvae of the 3 genera and to pupae of all but Eudrepanulatrix. Gives keys to adults and ♂ and ♀ genitalia of all spp. and to larvae and pupae of monicaria, carnearia, baueraria. Gives large distributional maps and table of flight periods of all spp. and races. Figures details of ♂ and ♀ genitalia of all spp. Presents all available notes on biology. An exceptionally thorough work. (C.R.)

281. da Rocha, Newton, "Notas biológicas sobre o esfingideo Erinnyis ello L., 1758" (In Portuguese). Bol. Secr. Agr., Indust. Comercio, Est. Pernambuco, Brasil, vol.15: pp.398-399, 1 pl. July-Dec. 1948. Notes on parasitism by fly, Belvosia bifasciata. (P.B.)

282. Root, Oscar M., "Mimicry of the Monarch Butterfly by the Viceroy." Turtox News, vol.27: pp.153-154. July 1949. Protests against continued spread of old view that Viceroy mimics Monarch butterfly to gain protection from birds, arguing that virtually all butterflies are safe from birds. (C.R.)

283. Rougeot, P.C., "Description de quelques Saturnides du Gabon" (In French). Bull. Mens. Soc. Linn. Lyon, vol.17: pp.7-10, 1 pl. Jan. 1948. Describes as new: Nudaurelia dionysiae, Drepanoptera berliozi, D. torquata form testouti, all from single specimens, all from Gabon. Figures these and the recently described ♀ of D. rectifascia. (P.B.)

284. Rougeot, P.C., "Première capture de Nudaurelia bouvieri Le Moult au Gabon" (In French). Bull. Mens. Soc. Linn. Lyon, vol.17: p.155. Oct. 1948.

285. Rupert, Laurence R., "Notes on the group of genera including Lozogramma Stephens and its allies (Lepidoptera, Geometridae, Ennominae)." Proc. Ent. Soc. Wash., vol.51: pp.137-151. 2 pls. Aug. 1949. Discusses the genera Philedia, Thallophaga, Gueneria, Homochlodes, Lozogramma, Tacparia, and Pachycnemia, giving their generotypes. Mentions some of their included species and proposes new combinations for some of them. The figures are excellent. (C.dP.)

286. Schwanwitsch, B.N., "Evolution of the wing-pattern in the Lycaenid Lepidoptera." Proc. Zool. Soc. London, vol.119: pp.189-263, 337 figs. May 1949. Continues the author's long series of studies of wing pattern evolution in Lepidoptera. (P.B.)

287. Sevastopulo, D.G., "A Supplementary List of the Food-Plants of the Indian Bombycidae, Agaristidae and Noctuidae." Journ. Bombay Nat. Hist. Soc., vol. 48: pp.265-276. Apr. 1949. Collects food-plant records from literature and adds a few new ones, for families Zygaenidae, Syntomidae, Arctiidae, Lymantriidae, Thaumatopoeidae, Lasiocampidae, Eupterotidae, Bombycidae, Drepanidae, Saturniidae, Notodontidae, Limacodidae, Psychidae, Thyrididae, Indarbelidae, Cossidae, Agaristidae, Noctuidae. Some error in titling this paper must have been made. (C.R.)

288. Sevastopulo, D.G., "The Butterfly Genus Delias." Journ. Bombay Nat. Hist. Soc., vol.48: pp.378-379. Apr. 1949. Notes on distastefulness of butterflies in all stages. (C.R.)

289. Smith, Ray F., D.E. Bryan, & W.W. Allen, "The relation of flights of Colias to larval population density." Ecology, vol.30: pp.288-297, 7 figs. July 1949. Study of C. eurytheme made in alfalfa fields near Westley, Calif. Found large flights made into fields with alfalfa less than 8" tall. Larval samples taken by sweeping. (C.R.)

290. Steinhaus, Edward A., "A new disease of The Variegated Cutworm, Peridroma margaritosa (Haw.)." Science, vol.106: p.323. 3 Oct. 1947.

291. Steinhaus, Edward A. & Clarence G. Thompson, "Granulosis Disease in the Buckeye Caterpillar, Junonia coenia Hübner." Science, vol.110: pp.276-278, 1 fig. 16 Sept. 1949.

292. Steyskal, George C., "An Indexing System for Taxonomists." Coleop. Bull., vol.3: pp.65-71. 8 Nov. 1949. Sets forth technique for keeping species and bibliographic files. (C.R.)

293. Temple, Vere, "The Courtship Flight of Butterflies as the Means of Extending the Range of Certain Species." Entomologist, vol.82: pp.145-147. July 1949.

294. Testout, H., "Révision du Catalogue des espèces françaises du genre Erebia (Lepid. Satyridae), 6me-8me parties" (In French). Bull. Mens. Soc. Linn. Lyon, vol.17: pp.90-98, 116-122, 147-154. June, Sept., Oct. 1948. Conclusion of the series. Completes the descriptions of individual forms, gives an addendum of new locality records and a summary catalogue of all forms. Describes as new: E. meolans stygne form rieli (S.E. France). (P.B.)

295. Testout, H., "Description de nouveaux Drepanoptera africains et révision du groupe d'antinorii Obth." (In French). Bull.Mens.Soc.Linn.Lyon, vol.17: pp.189-191. Dec. 1948. Describes as new: D. racunoides (Gold Coast); D. ugandensis (British E.Africa). Groups latter with antinorii and marginimacula. Describes pattern and ♂ genitalia of all 4 spp. (P.B.)

296. Townes, Henry, "The effectiveness of DDT against dermestids in insect boxes." Proc. Ent. Soc. Wash., vol.51: pp.165-168, 1 table. Aug. 1949. The results indicate that DDT has some value against dermestids, but is no sure preventative. (C.dP.)

297. Viette, P., "Contribution à l'étude des Hepialidae (7e Note). Le genre Trichophassus Le Cerf." Bull. Soc. Ent. France, vol.54: pp.72-73, 3 figs. May 1949. Shows validity of genus, describing external characters and ♀ and ♂ genitalia, figuring latter and antennae. (C.R.)

298. Viette, Pierre E.L., "Catalogue of Heterocerous Lepidoptera from French Oceania." Pacific Science, vol.3: pp.315-337. Oct. 1949. Lists 402 species distributed as follows: 6 Tineidae; 17 Lyonetiidae; 2 Plutellidae; 6 Gracilariidae; 2 Coleophoridae; 3 Hyponomeutidae; 1 Elachistidae, 10 Glyphipterygidae; 5 Schreckensteiniidae; 1 Copromorphidae; 1 Orneodidae; 3 Carposinidae; 1 Oecophoridae; 46 Cosmopterygidae; 6 Gelechiidae; 16 Eucosmidae; 24 Tortricidae; 2 Limacodidae; 94 Pyralidae; 3 Pterophoridae; 1 Thyrididae; 17 Sphingidae; 39 Geometridae; 1 Uraniidae; 1 Epiplemidae; 2 Amatidae; 15 Lithosiidae (incl. Arctiidae); 75 Noctuidae; 1 Lymantriidae. Distributions included. Extensive list of references given. All such catalogues are valuable, but soundness of such artificial geographic limitation seems doubtful. (C.R.)

299. Viette, P., "Contribution à l'étude des Micropterygidae (5e Note). Position systématique de la famille (Lepidoptera") (In French). Rev. Franç. Ent., vol.16: pp.69-73. 1949. Historical review and discussion of the position of this family. Prefers to retain them in the Lepidoptera. (P.B.)

300. Wagner, Warren H., Jr., & David F. Grether, "The Butterflies of the Admiralty Islands." Proc. U.S. Nat. Museum, vol.98: pp.163-186, pls. 11-13. 1948. Notes on 69 spp. - 16 new records for Admiralties, 33 recorded before, 20 not found by present authors. Photos of 13 spp. from Admiralties, Yoma algina from Solomons. No notes on early stages. (C.R.)

301. Wakely, S., "Occurrence of a Species of Blastobasis resembling decolorella Wollaston in South London." Proc. & Trans. So. London Ent. & Nat. Hist. Soc., 1947-48: pp.205-209, 2 figs. March 1949. New species for England, perhaps introduced. Habits discussed; ♂ and ♀ genitalia figured. (P.B.)

302. Warren, B.C.S., "A Note on the Central European Races of Papilio machaon and Their Nomenclature." Entomologist, vol.82: pp.150-153. July 1949. (P.B.)

303. Wellington, Eunice F., "Artificial Media for Rearing some Phytophagous Lepidoptera." Nature, vol. 163: pp.574-575. 9 Apr. 1949. Summarizes studies on developing artificial rearing media for Choristoneura fumiferana, Archips rosaceana, A. fervida, and Dioryctria reniculella in Canada. A most remarkable advance. (C.R.)

304. Westerneng, R., "Pontia daplidice L." (In Dutch). Entomol. Berichten, vol.12: p.381. 21 May 1949. Gives collecting notes on daplidice in Holland. (A.D.)

305. Wichra, Jaroslav, "Hojný výskyt vakonose Sterrhopteryx standfussi H.Schäff. v Krkonosích. (Lep.)" (In Czech). Acta Soc. Ent. Cechosloveniae, vol.46: pp.73-74. 1 Feb. 1949.

306. Wightman, A.J., "Noctuae of Pulborough, Sussex, in 1948." Ent. Rec. & Journ. Var., vol.61: pp.76-78. July-Aug. 1949.

307. Wild, E.H., "Saturnia pavonia ab. (Lep. Saturniidae) flariocellatus nov." (sic!) Entomologist, vol.80: p.147, 2 figs. June 1947.

308. Williams, C.M., "Extrinsic Control of Morphogenesis as Illustrated in the Metamorphosis of Insects." Growth, vol.12, suppl.: pp.61-74, 2 figs. 1948. Summarizes his work on control of diapause of the Cecropia silkworm. (P.B.)

309. Wiltshire, E.P., "Some More New Records of Lepidoptera from Cyprus, Iraq and Iran." Ent. Rec. & Journ. Var., vol.61: pp.73-76. July-Aug. 1949.

310. Wisselingh, T.H. van, "Lepidoptera in 1947" (In Dutch). Tijdschr. voor Entomol., vol.91, Verslag: pp.XXI-XXII. 1 May 1949. Collecting notes on Macrolepidoptera in Holland in 1947. (A.D.)

311. Worm-Hansen, J.G., "A Gynandromorphic Moth". Ent. Meddelelser, vol.25: p.221. 15 June 1948. Figures bilateral gynandromorph of Stygiostola umbratica. (P.B.)

312. Wright, Albert E., "Note on the Foodplant of Phalonia luridana, Gregson." Ent. Rec. & Journ. Var., vol.59: pp.69-70. June 1947. Bred from burdock, Arctium lappa. (P.B.)

313. Zamecnik, Paul C., Robert B. Loftfield, Mary L. Stephenson,& Carroll M. Williams,"Biological Synthesis of Radioactive Silk." Science, vol.109: pp. 624-626, 2 figs. 24 June 1949. Produced by injecting C^{14}-labelled glycine and alanine into Platysamia cecropia larvae. (P.B.)

NOTICES BY MEMBERS

All members may use this column to advertise their offerings and needs in Lepidoptera. There is no cost for this service. Unless withdrawn sooner by the member, each notice will appear in THREE issues.

Wanted: Papered specimens of Pieris napi, Pieris bryoniae, and Papilio machaon from all parts of the world, particularly from American & Asiatic localities, with full data and in perfect condition. Offered in exchange: Papered Macro-lepidoptera from Germany, and, if possible, breeding material. Gerhard Hesselbarth, Hindenburgstr. 13, (23) Diepholz/Hann., GERMANY.

Lepidoptera from FLORIDA and WISCONSIN, a lot of over 2000 specimens, about 300 species, pinned and in papers. Want to sell the lot at bargain price. Send for list. Alex K. Wyatt, 5842 N. Kirby Ave., Chicago 30, Illinois.

Wanted: To exchange good used copy of Holland's MOTH BOOK for copy of revised edition of the BUTTERFLY BOOK in good used condition.
L.H. Bridwell, Forestburg, Texas.

Wish to exchange about 200 MANITOBA MOTHS, about 50 species, half named, full data. Desire exotic Rhopalocera, particularly Morpho. What offers for the lot? C.S. Quelch, Transcona, Manitoba, Canada.

For sale: JAPANESE Papilionidae, Pieridae, Nymphalidae, and Sphingidae with all correct data supplied. Listings sent on request.
M.W. Osborne, 2100 Price St., Rahway, New Jersey.

For exchange: The Spider Book, revised ed. Comstock; Hand Book of Frogs and Toads, Wright and Wright; The Grasshopper Book, Bronson; also Pennsylvania fossils. Desire ♀ specimens of Speveria diana or Papilio ponceana ♀ or ♂ with data. J.A. Evey, Benson, Illinois.

EUROPEAN PARNASSIIDAE in papers (full data, exact names, perfect condition) for sale or in exchange for North American Papilionidae and Parnassiidae in papers. Dr. W.J. Reinthal, University of Oklahoma, Norman, Oklahoma.

For exchange: NORTHWESTERN WASHINGTON moths and butterflies collected last season. Desire Australian or any tropical Lepidoptera. Mrs. Emily Henriksen, Orcas Island, East Sound, Washington.

A complete line of entomological equipment and specimens is now available: insect boxes, mounting boards, nets, pins, Rikers, etc., as well as hundreds of species of tropical and N.Am. Lepidoptera. Price lists sent free upon request. Robert G. Wind, Rt. 145, Buena Vista, Livermore, California.

California Academy of Sciences drawers for sale. 17 x 19 x 2 1/2 inches, white lined composition bottom, double strength glass top, hand-rubbed clear lacquer finish, complete with hardware. $6.00 each, $65.00 doz. Cabinets available. Bio Metal Associates, P.O. Box 346, Beverly Hills, California.

Wanted: Papilionidae of world, especially Archon, Hypermnestra, Zerynthia, Baronia and Eurycus. Have for exchange many species of Japanese Rhopalocera. Yoshio Okada, Yanagida-Cho, Saga, Kyoto, JAPAN.

Wanted: Basswood mounting strips in all sizes.
M.E. Cady, 21 Border St., Dedham, Massachusetts.

Spanish Lepidoptera for sale or exchange. Want American, Indo-Australian, etc. Rhopalocera and Macroheterocera. H. Flores & J. Vives, 17 Plaza Lesseps, Barcelona, SPAIN.

For sale: Ecuadorian butterflies from both slopes of Andes, collected by William Clark-Macintyre. Prices PER 100 for average material as follows:
Papilio - $15.00; Pieridae - $6.00; Ithomidae - $6.00; Heliconiidae - $8.00; Satyridae - $7.00; Nymphalidae, common - $6.00; Nymphalidae, uncommon - $12.00; Lycaenidae & Erycinidae, common - $7.00; Hesperiidae - $5.00.
Rarer material such as Morpho, Caligo, Brassolis, and material selected by genus or species - prices on application. Send for recent price lists. Advise me of your wants. F. Martin Brown, Fountain Valley School, Colorado Springs, Colorado.

For sale or exchange - Kansas butterflies and moths, esp. Papilionidae, Pieridae, Nymphalidae, Hesperiidae; Heterocera: Sphingidae, Saturniidae, Arctiidae, Noctuidae, Catocalinae and Geometridae. Mounted or papered. William Howe, 822 E.11th St., Ottawa, Kans.

Butterflies of Florida, Georgia, and the Carolinas for exchange or sale.
H.L. King, 419 Highland Ave. S.W., Roanoke, Virginia.

Duplicates for exchange - butterflies from European Alps, Pyrenees, Lapland, Mediterranean, Atlas Mts., N. Africa, Alberta. British moths, also local races British butterflies. Desiderata: many N. American spp., chiefly alpine, arctic, desert & Gulf States. Correspondence welcomed. Colin W. Wyatt, Cobbetts, Farnham, Surrey, ENGLAND.

Have few pairs of Argema mittrei from Madagascar for exchange for Papilio specimens, preferably of Africa or Australia. Have also beetles (Buprestidae and Cetonidae from Madagascar) in exchange for tropical butterflies.
A. Glanz, 289 E. 98th St., Brooklyn 12, New York.

Wanted: thirty thousand butterflies and moths from all over the world. Small or large lots.
Ben Karp, 3148 Foothill Blvd., La Crescenta, Calif.

Wanted to buy: Dyar's "Classification of Lepidopterous Larvae"; Rothschild & Jordan's "A Revision of the Lepidopterous Family Sphingidae" (Nov. Zool., 1903); Scudder's "The Butterflies of New England".
Peter Boone, R.F.D. 3, Box #172, Princeton, N.J.

In this issue, Living Material notices will be found on page 114.

Limited number scarce Eupackardia (Callosamia) calleta cocoons for exchange. Desire pupae Callosamia angulifera and Asiatic, African and South American Saturniidae.
R.L. Halbert, 2446 Cudahy St.,Huntington Park, Calif.

Wanted for cash or exchange: living ova or pupae of Papilio machaon (Palaearctic), Platysamia columbia nokomis, Papilio glaucus. Urgently needed for hybridization and sterility experimentation. Also need egg masses of Catocala relicta. Also desire 200 living cocoons of Platysamia cecropia.
D.P. Frechin, 1504 N. Lafayette, Bremerton, Wash.

Cocoons or eggs of all species of AMERICAN SATURNIIDAE required. Will exchange living or preserved material of British Lepidoptera and/or Indian Saturniidae. Also willing to obtain books or other requirements of American supplier. Currency restrictions prevent cash transactions! Please help if you can. C.F. Rivers, 250 Shepherds Lane, Dartford, Kent, ENGLAND.

Wanted: chrysalids of any North American PAPILIO in exchange for good European butterflies of Parnassiidae in papers (full data, exact names).
Dr. W.J. Reinthal, Univ. of Oklahoma, Norman, Okla.

Available now: GRAELLSIA ISABELLAE (Spanish luna) & other Palaearctic fauna pupae. Otto H. Schroeter, 613 Williams St., New London, Conn.

Have cocoons of WILD CONNECTICUT SAMIA WALKERI("Cynthia") to exchange for those of other Saturniidae.
R.W. Pease, 57 Yale Station, New Haven 11, Conn.

Wanted to buy: rearing material in season - cocoons, pupae or eggs of Rhopalocera, Saturnioidea, Sphingidae, Arctiidae and Catocala. Write first quoting prices and naming food plants. Have Austrian pins for sale, best make (Trade Mark "Elephant"), rustproof, $4.00 per thousand. Eugene Dluhy, 3912 N. Hamilton Ave., Chicago 18, Ill.

RESEARCH REQUESTS

Wanted: Records and field notes for all subspecies of Speyeria nokomis EXCEPT apacheana from Round Valley (for this locality, records and notes are plentiful and no more are needed). It will only take a moment to send me a card with the data from any nitocris, nigrocaerulea, caerulescens, etc. which may be available, and these records will be immensely helpful to me. Personal recollections of places like Sapello Canyon, N.M., or any other localities where nokomis subspecies have been observed will be especially welcome. A monograph of this species is in preparation.
L.P. Grey, R.F.D., Lincoln,Maine.

Urgently wanted for revisional study: Pyrausta of the illibalis-arsaltealis-gracilalis complex. Single specimens or series, from any locality, on loan, exchange, or purchase basis. Write Dr. E.G. Munroe, Systematic Unit, Division of Entomology, Science Service, Department of Agriculture, Ottawa, Ontario, Canada.

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ADDITIONS TO THE LIST OF MEMBERS

Agenjo, Ramon, Instituto Español de Entomologia, Palacio del Hipódromo, Madrid, SPAIN. LEPID: of Spain. Coll.
Bancroft, Larry, 1023 S. Main, Ottawa, Kansas. Coll. Ex. Buy.
Dennis, Arthur E., 758 N. 4 E., Provo, Utah. RHOP. Life History. Coll. Ex.
Herrara, José (Prof.), Lo Ovalle 0195, Santiago, CHILE. LEPID: genitalia.
Krogerus, Harry W. (Dr.), Mannerheimvägen 25A, Helsingfors, FINLAND. LEPID: esp. of Canada, and Tortricidae. Coll. Ex.
Monroe, Burt L., Jr., Ridge Road, Anchorage, Kentucky. RHOP. MACRO. Coll. Ex.
Rivers, C.F., "Heatherbank", 250 Shepherds Lane, Dartford, Kent, ENGLAND.
Werner, F.G., Biological Labs., Harvard University, Cambridge 38, Mass.

DECEASED

Avinoff, Andrey (Dr.). (New York.)
Hall, Arthur D. (Nova Scotia.)
Smith, Claude I. (California.)

THE LEPIDOPTERISTS' NEWS
Monthly periodical of The Lepidopterists' Society

Membership is open to all persons interested in any aspect of the study of butterflies and moths. The 1950 dues, including subscription to the NEWS, are $2.00 for Regular Membership and $4.00 for Sustaining Membership. Please make remittances payable to: C.L. Remington.
Price for Vols. 2 and 3 is $2.00 each.
No complete sets of Vol.1 are available.

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ERRATA FOR VOLUME II

p.101: add just above double line of masthead: "Volume II December 1949 Number 9".

p.101: add at bottom center: "101".

p.103: delete uppermost "THE LEPIDOPTERISTS' NEWS".

MAILING DATES FOR VOLUME III

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p. 5, title: "10. 'The Lepidoptera...' " should be: "12. 'The Lepidoptera...' ".

p. 12, right col., 4th item: "Vol.3, no.9" should be: "Vol.2, no.9".

p. 58, right col., line 4 of #144: "Incheumon" should be: "Ichneumon".

For other errata, see pp.24,59,66,82.

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LIST OF MEMBERS OF THE LEPIDOPTERISTS' SOCIETY

October 1949

The list is arranged alphabetically by nations, and by states or provinces in the U.S.A. and Canada. State, province, and nation names are here omitted in the address of each member. The address is followed by the lepidopterological interests. Where only "RHOP.", "MACRO.", or "MICRO." appears, the interest is general. "LEPID." is used where interests include all three of the above groups. Following the interests among taxonomic groups are the other aspects of lepidopterology in which the member is interested. The member's name preceded by an asterisk (*) indicates Charter Membership; his name in capital letters indicates Sustaining Membership. The word "Nearctic" here means America north of Mexico. For uniformity "Phalaenidae" is used for all cases, even though the equivalent name "Noctuidae" had been placed on the membership card by some members. Similarly, Speyeria, Boloria, etc. are used for the Nearctic region instead of Argynnis, Brenthis, etc. The following abbreviations are used:

LEPID. - All Lepidoptera
RHOP. - Rhopalocera (butterflies)
MACRO. - Macro-Heterocera } (moths)
MICRO. - Micro-Lepidoptera }
Coll. - Collection
Ex. - Exchange
esp. - especially

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NATIONAL MUSEUM

ARGENTINA

Bourquin, Fernando F., Calle Conde 1639, Buenos Aires. LEPID: Life History only. Coll.

Breyer, Alberto, Maipu 267, Buenos Aires. RHOP.and MACRO: Argentine only. Coll.

Hayward, Kenneth J. (Prof.), Miguel Lillo 205, Tucumán. RHOP: Neotropical, esp. Argentine and Hesperiidae.

AUSTRALIA

Common, Ian F.B., Technical Secretary, Council for Scientific & Indust. Research, Div. of Economic Entomology, P.O. Box 109, City, Canberra, A.C.T. MICRO: esp. Australian Tortricidae. Life History. Coll.

Wilson, Francis E., 28 Ferncroft Ave., E. Malvern (S.E. 5), Victoria. RHOP: esp. Hesperiidae. Coll. Ex.

AUSTRIA

Wilcke, Hermann (Dr.), Kössen/Tyrol Nr. 199. RHOP. MACRO: esp. Phalaenidae, Geometridae. Coll. Sell.

BELGIUM

Berger, Lucien, Redacteur, Lambillionea, 2 vallée des Artistes, Linkebeek-lez-Bruxelles. LEPID.

Dufrane, Abel, Musée d'Histoire Naturelle, Avenue du Tir 69, Mons. LEPID: world, esp. MICRO. Coll. Ex.

Janmoulle, Edward, 2 rue Ernotte, Watermael. MICRO: local, esp. Lithocolletis and other leaf-miners. Coll. Ex.

NOV 15 1949

*Kiriakoff, S.G., Zoological Labs., Ghent University, 14 Universiteitsstraat, Ghent. RHOP: esp. Belgian Congo. MACRO: esp. Phalaenoidea, Thyretidae. MICRO: esp. Pyralidae. Phylogeny, Classification. Ex.

Overlaet, Frans G., 9 Chaussée de Louvain, Kortenberg (Brabant). LEPID. Life History, Mimicry. Coll. Ex. Buy. Sell.

BRAZIL

*Araujo, R.L. (Dr.), Instituto Biológico, P.O. Box 119-A, São Paulo. MACRO: esp. Castniidae, Dalceridae. Coll. Buy.

Cardoso, Aldo (Dr.), Avenida Teresa Cristina 65, Maceió, Alagoas. RHOP. MACRO: esp. Saturniidae. Coll. Ex.

d'Almeida, Remualdo F. (Dr.), Rua Viana Junior 25, Encantado, Rio de Janeiro, D.F. RHOP: esp. Ithomiinae, Pieridae, Papilionidae. MACRO: esp. Syntomidae, Arctiidae, Sphingidae, Saturnioidea. Biology. Coll. Ex. Buy.

May, Edward E. (Dr.), Caixa Postal 176, Rio de Janeiro. RHOP: esp. Papilionidae, Pieridae, Danaidae, Nymphalidae. MACRO: esp. Saturniidae. Coll. Ex. Buy.

Oiticica Filho, José (Dr.), Rua Alfredo Chaves 59, Rio de Janeiro. RHOP. MACRO: esp. Sphingidae, Saturniidae. Morphology. Coll. Ex. Buy.

Pearson, Henry R., Caixa Postal 5151, Rio de Janeiro. RHOP: esp. Nearctic Papilionidae. MACRO: esp. Saturniidae, Sphingidae, Mimallonidae. Life History, Food Plants, etc. Coll. Ex. Buy.

Travassos, Lauro (Prof.), Instituto Oswaldo Cruz, Laboratório de Helmintologia, Caixa Postal 926, Rio de Janeiro, D.F. MACRO: esp. Arctiidae, Adelocephalidae. Coll. Ex.

Travassos Filho, Lauro (Dr.), Dept. de Zoologia, Caixa Postal 172-A, São Paulo. MACRO: esp. Ctenuchidae, Pericopidae, Castniidae. Life History, Field Technique. Coll. Ex.

BRITISH WEST INDIES

Gunter, Peter C., 22 Beechwood Ave., Cross Roads, Jamaica. RHOP: esp. of Jamaica. MACRO: esp. Sphingidae. Life History, etc. Coll. Ex. Sell.

Lewis, C. Bernard, Science Museum, Institute of Jamaica, Kingston, Jamaica. RHOP: esp. of Jamaican and Cayman Islands. Coll.

Perkins, Lilly G., Sunnybank, Claremont, St. Ann, Jamaica. RHOP. MACRO: esp. Sphingidae. Sell.

CANADA

ALBERTA

BOWMAN, KENNETH, 10240 Wadhurst Rd., Edmonton.

BRITISH COLUMBIA

*Guppy, Richard, R.R. 1, Marine Drive, Wellington. MACRO. Coll. Ex. Sell.

MANITOBA

Bird, Charles, 1930 Rosser Ave., Brandon. RHOP: esp. Hesperiidae, Pieridae. Coll.

*Quelch, C.S., Transcona. LEPID: esp. Central and S. American RHOP. Coll. Ex.

NOVA SCOTIA

*Ferguson, Douglas C., Box 617, Armdale, Halifax Co. RHOP. MACRO: esp. Eubaphe, Rivulinae, Herminiinae, Geometridae of Nearctic region. Life History, Food Plants. Coll. Ex.

ONTARIO

Bailey, Earl G., 103 Carleton St., St. Catharines. RHOP. MACRO. Coll. Ex. Sell.

*Freeman, Thomas N. (Dr.), Div. of Entomology, Dept. of Agriculture, Central Experimental Farm, Ottawa. RHOP: esp. of Arctic. MACRO. MICRO. Coll. Ex.

*Hardwick, David F., Div. of Entomology, Dept. of Agriculture, Central Experimental Farm, Ottawa. MACRO: esp. Phalaenidae. Coll. Ex.

Wigmore, R.H., Westboro, R.R. 1. MACRO: esp. Phalaenidae. Coll. Ex.

QUEBEC

*Adelphe (Rev. Brother), Ecole Supérieure Richard, 200 Rue Galt, Verdun. RHOP: esp. of eastern Canada. MACRO: esp. Phalaenidae of eastern Canada. Coll.

*GRAY, P.H.H. (Dr.), Box 236, Macdonald College. RHOP. MACRO. Biology. Coll.

Lambert, Robert, Dept. of Lands and Forests, Bureau of Entomology, 53 Grande-Allee, Quebec. MICRO: esp. Tortricidae. Forest Lepidoptera, Biology. Coll.

*Munroe, E.G. (Dr.), Institute of Parasitology, Macdonald College, RHOP. MACRO. MICRO: esp. Pyralidae and related families. Coll. Ex. Buy.

*Sheppard, Arthur C., 5554 Coolbrook Ave., Montreal 29. LEPID: of Quebec only. Coll. Ex. Buy.Sell.

SASKATCHEWAN

*BRUGGEMANN, PAUL F., R.R. 1, Furness. RHOP. MACRO: esp. Geometridae. MICRO: esp. Hepialidae. Life History. Coll. Ex. Buy. Sell.

*Fitch, Richard J., Rivercourse P.O. via Lloydminster. Arctic LEPID. Sell.

CHINA

Lu, Jin-sheng, Institutum Entomologicum Choui, Chang-Chia-Kang, Wukung, Shensi.

CUBA

de la Torre y Callejas, Salvador L. (Dr.), Playa 75 1/2, Matanzas. RHOP: esp. Eurema. Coll. Ex.

CZECHOSLOVAKIA

Cejp, Karel (Prof. Dr.), Botanical Institut, Charles University, Benatska 2, Praha II. LEPID. Coll. Ex.

DENMARK

Andersen, Axel, Odensegade 7, Ø, Copenhagen. RHOP. MACRO. Biology, Distributional Factors. Coll. Ex. Sell.

*Christensen, Georg, Parmagade 24, III, Copenhagen S. RHOP: esp. Argynnis, Phyciodes, Erebia. Genetics. Coll. Ex.

Jensen, Heinz, 54 Hyltebjerg Alle, Vanlose, Copenhagen. RHOP. MACRO: esp. Geometridae, Sphingidae. Coll. Ex.

Sørensen, Arne, Hellerupvej 10, Hellerup Bogbinderi, Hellerup.

EIRE

Beirne, Bryan P. (Dr.), Dept. of Zoology, Trinity College, Dublin. MACRO. MICRO. Ecology, Distribution. Coll. Ex.

Smartt, John B., 89 Connaught St., Phibsboro, Dublin. RHOP: esp. Papilionidae, Pieridae, Hesperiidae. MACRO. Life History. Coll. Ex. Buy.

FINLAND

Hackman, Walter (Dr.), Helsingfors, Parkgatan 9B. RHOP: of Scandinavia. MACRO: of Scandinavia. MICRO: of Holarctic region, esp. Coleophoridae, Gelechiidae: Phthorimaea. Systematics, Distribution. Coll.

Hellman, E.A. (Mr. and Mrs.), Annank. 2F, Helsinki. RHOP: esp. Pieris, Argynnis, Brenthis. MACRO: esp. Acronycta. MICRO. Coll. Ex. Sell.

FRANCE

Berjot, Etienne E., 1 rue du Plessis-Pommeraye, Creil (Oise). RHOP. MACRO. Life History. Coll. Ex.

Bourgogne, Jean, Muséum d'Histoire Naturelle, 45 bis Rue de Buffon, Paris 5e. RHOP. MACRO: esp. Psychidae (Palaearctic and African). Life History, Morphology, Biology. Coll. Ex.

Fonquernie, Pierre, Directeur dept. des P.T.T., Hotel des Postes, Rennes (Ille-et-Vilaine).

Gaillard, François, 5 Cité du Midi, Paris 18e. RHOP. MACRO. Coll. Ex. Buy.

Herbulot, Claude, 31 Ave. d'Eylau, Paris 16e. MACRO: esp. Geometridae. Coll. Ex. Buy.

LeCharles, Louis, 22 Avenue des Gobelins, Paris 5e. RHOP. MACRO: esp. Zygaenidae. MICRO: Crambidae, esp. Crambus. Biology. Coll. Ex.

LeMarchand, S., 125, rue de Rome, Paris 17e.

Rousseau-Decelle, Georges, 3, rue de Monceau, Paris 8e.

*Stempffer, Henri, 4, Rue Saint Antoine, Paris 4e. RHOP: esp. Lycaenidae (Holarctic and African particularly).

Varin, Gilbert, 4, avenue de Joinville, Joinville-le-Pont (Seine). RHOP: esp. Nymphalidae, Satyridae. Study of races (subspp.), Geography, Distribution. Coll. Ex.

*Varnier, , Pension de Famille, "Vieux Moulin", Pont par Semur (Cote d'Or).

Viette, Pierre P., Muséum Nat. d'Histoire Naturelle, 45 bis, Rue de Buffon, Paris 5e. MICRO: esp. Homoneura (Micropterygidae, Eriocraniidae, Hepialidae). ♂ genitalia. Coll. Ex.

GERMANY

Albrecht, Paul, (1) Berlin-Hummelsburg, Friedrichstrasse 108. RHOP. MACRO: esp. Sphingidae, Saturnia. Coll. Ex.

Börner, Carl (Dr.), Naumburg/Saale 19a, Jenaerstr. 22, Russian Zone. LEPID: esp. for Phylogenetics. Coll.

Busch, Theo (Frau), (22b) Niederadenau, über Adenau/Eifel. RHOP: esp. Melitaea. Life History. Coll. Ex.

Forster, Walter (Dr.), Entomologische Abteilung, Zoologische Sammlung des Staates, Menzingerstr. 67, München 38. LEPID. Coll. Ex.

Froreich, v. (Dr.), Postschliesfach #431, Aachen.

Hering, Erich M. (Prof. Dr.), Berlin N.4, Invalidenstr. 43, Zoologisches Museum. MACRO: Pericopidae, Zygaenidae, Dioptidae. MICRO. Leafminers of all orders. Coll. Ex.

Hesselbarth, Gerhard, (23) Diepholz (Hann.), Hindenburgstr. 13. Palaearctic RHOP. & MACRO: esp. Papilionidae, Pieridae, Bombyces, Arctiidae. Life History, Zoogeography. Coll. Ex.

de Lattin, Gustaf J. (Dr.), Geilweilerhof, Post Siebeldingen (22a) über Landau/Pfalz, Forschungsinstitut f. Rebenzüchtung. RHOP: Holarctic, esp. Satyridae. MACRO: Holarctic, esp. Acronictinae and Bryophilinae. MICRO: esp. Palearctic. Distribution, Evolution, Genetics. Coll. Ex.

Rensch, Bernhard (Prof. Dr.), Münster (Westf.), Museum für Naturkunde, Himmelreich-Allee.

Warnecke, Georg (Landgerichtsdirektor), Hohenzollernring 32, Hamburg-Altona. RHOP: Palaearctic. MACRO: Palearctic, esp. Geometridae. Migration, Zoogeography. Coll.

GREAT BRITAIN

ENGLAND

Carpenter, G.D. Hale (Prof.), Dept. of Entomology, University Museum, Oxford. RHOP: esp. African and Pacific Euploea. Mimetic, Warning, & Cryptic Coloration. Coll.

Evans, W.H. (Brig.), Dept. of Entomology, British Museum (Nat. Hist.), Cromwell Road, London S.W. 7. RHOP: esp. Hesperiidae.

*Ford, E.B. (Dr.), University Museum, Oxford. LEPID. Genetics. Coll.

Hards, Charles H., 40 Riverdale Rd., Plumstead, London S.E. 18. English and American RHOP. & MACRO: esp. Catocala, Saturniidae. Life History, Migration, Distribution, Variation. Coll. Ex.

Heley, Robert G., "Lygoes", Burcott, Wing, Leighton Buzzard, Beds. RHOP: of world, esp. Pieridae, Nymphalidae, Papilionidae. MACRO: esp. Saturniidae. Distribution, Mimicry. Coll. Ex. Buy. Sell.

Hemming, Francis, 28 Park Village East, Regent's Park, London N.W. 1. RHOP: esp. Palaearctic and Nearctic. Coll. Ex. Buy.

*Jordan, Karl (Dr.), Zoological Museum, Tring, Herts.

*Riley, Norman D., 7 McKay Road, London S.W. 20. RHOP.

Rockingham, N.W. (Lt.), R.A.F., Middle Wallop near Storkbridge, Hants. RHOP. MACRO. Migration. Coll. Ex.

Smith, P. Siviter, 21 Melville Hall, Holly Road, Edgbaston, Birmingham 16. RHOP: esp. Lycaena. Coll. Ex. Buy.

*Stevens, Herbert, 4 Beaconsfield Rd., Tring, Herts.

Tams, W.H.T., Dept. of Entomology, British Museum (Nat.Hist.), Cromwell Road, London, S.W. 7. MACRO: esp. Lasiocampidae, Agrotidae. MICRO: esp. Pyralidae, Tineidae. Life History.

Warren, Brisbane C.S., 3 Augusta Mansions, Folkestone, Kent. RHOP: esp. Satyridae, Nymphalidae. Life History, Distribution. Coll.

Williams, C.B. (Dr.), Rothamsted Experimental Station, Harpenden, Herts. Migration, Populations, Ecology. Coll. Ex. Buy. Sell.

Wyatt, Colin W., Cobbetts, Farnham, Surrey. RHOP: Palaearctic and Nearctic, esp. Alpine and Arctic spp. Local Races. Coll. Ex. Buy. Sell.

WALES

Henstock, Herbert (Dr.), Glengariff, Caerwys, North Wales. RHOP: of world. MACRO: of Great Britain. Experimental Moth Trap. Coll. Ex.

HUNGARY

Gozmány, Lancelot A. (Dr.), Budapest, XII. Györi ut 1. II. 14. MICRO. Helophil Moths. Coll. Ex. Sell.

Kovács, L. (Dr.), Budapest, XII. Kléh István u 3/a. III. 1.

Lengyel, Julius F. (Dr.), Budapest XII. Budakeszi ut 38. RHOP: of Europe, esp. Melitaea. MACRO:Phalaenidae, esp. Cucullia. Distribution, Zoogeography. Coll. Ex.

INDIA

HIMALAYAN BUTTERFLY CO., Shillong, Khasi Hills.

INDONESIA

Diakonoff, A. (Dr.), Zoölogisch Museum en Lab., Buitenzorg, Java. MICRO: all except Pyraloidea. Leaf-miners, Biology, Morphology. Coll. Ex. Buy.

Straatman, Raymond, Ondern, "Dolok Ilir" - P/O Serbalawan, East Coast of Sumatra. RHOP: esp. Papilio, Pieridae, Nymphalidae, Lycaenidae. MACRO: esp. Saturniidae, Sphingidae, Arctiidae, Zygaenidae. Food Plants. Coll. Ex. Sell.

Wegner, A.M.R., Zoölogisch Museum, Buitenzorg, Java.

ITALY

Verity, Roger R. (Dr.), Caldine (Firenze). RHOP: esp.Palearctic. Coll. Ex. Buy.

JAPAN

Azuma, Masao (Prof.), 1644, Rinkeiji, Arima, Hyogo-ku, Kobe. MACRO: esp. Geometridae. MICRO: esp. Pyralidae. Life History, Distribution. Coll. Ex.

Inoue, Hiroshi, 290, Miyamae, Oka-machi, Minami-ku, Yokohama. MACRO: esp. Geometridae, Cymatophoridae, Drepanidae. Life History. Coll. Ex.

Murayama, Shu'ichi (Prof.), Shinjo-cho 744, Ibaraki-shi, Osaka-fu. RHOP: esp. Parnassidae, Lycaenidae, Neptis, Limenitis, Erebia, Oeneis. Zoogeography. Coll. Ex.

Okada, Yoshio, Editor, Lepidopterological Society of Japan, Yanagida-Cho, Saga, Kyoto.

Shirôzu, Takashi, Entomological Lab., Department of Agriculture, Kyushu University, Fukuoka. RHOP. Life History, Food Plants, Distribution. Coll.

Sugitani, Iwahiko (Prof.), Shinmachi-Nishiiri, Nakachojya-machi-doori, Kamikyoku, Kyoto. LEPID: esp. Japanese and Korean Geometridae. Distribution.

KOREA

Seok, D.M., National Science Hall, Chung-ku, Seoul. RHOP: Pieridae, esp. Pieris.

MEXICO

Smith, Arthur C., Rockefeller Foundation, Calle de Viena 26, Mexico, D.F. RHOP. & MACRO: esp. of Mexico and southwestern U.S.A. Ecology, Distribution. Coll. Ex. Buy. Sell.

NETHERLANDS

Lempke, B.J., Oude Yselstraat 12^{III}, Amsterdam Z-2. RHOP. & MACRO: of Netherlands. Life History, etc.

Roepke, W. (Prof. Dr.), Lab. voor Entomologie, Berg 37, Wageningen. RHOP. & MACRO: esp. Palaearctic and Indomalayan. Life History, Ecology, Genetics, Morphology, Histology, Zoogeography, Systematics.

PHILIPPINES

SUSON, F.M., Suson's Pharmacy, Cebu City. RHOP: esp. of Philippines.

Uichanco, Leopoldo B. (Dr.), Dean of College, Laguna. RHOP. Distribution. Coll.

PORTUGAL

da Silva Cruz, Maria Amelia, Quinta de S. João, Candal, Vila Nova de Gaia. RHOP: esp. Melitaea. MACRO: esp. Geometridae. Migration. Coll. Ex.

SPAIN

Flores Casas, Hilario, 17, Plaza Lesseps, Barcelona. LEPID. Coll. Ex. Buy. Sell.

Marten, Werner, calle Guillermo Tell, 44, Barcelona. RHOP. MACRO: esp. Zygaena. MICRO. Migration, Biogeography. Coll.

*ROBERT, JOHN H., 41 Ronda San Antonio, Barcelona. RHOP: esp. Papilionidae and Pieridae of world; Holarctic Lycaenidae, and Limenitis, etc. Coll. Ex. Buy.

Torres, Juan, 1 Calle Dr. Romagosa, Valencia. RHOP: esp. Papilionidae, Pieridae (Delias, Catopsilia), Danaidae, Heliconiidae, Nymphalidae, Morphidae. MACRO: esp. Zygaenidae, Arctiidae (Arctia, Callimorpha), Saturniidae, Sphingidae, Uraniidae. Life History. Coll. Ex. Buy.

Vilarrubia, Antonio, Instituto Municipal de Ciencias Naturales, Apartado 593, Barcelona.

Vives Puigpalet, José, 179, calle Marina, Barcelona. LEPID. Coll. Ex. Buy. Sell.

SWEDEN

Bryk, Felix, Naturhistoriska Riksmuseum, Entomologiska Avdelningen, Stockholm 50. RHOP: esp. Parnassiidae. MACRO: esp. Drepanidae. Wing Venation Teratology, Sphragidology, Linneana.

Nordström, Frithiof (Dr.), Kungsholmstorg 1, Stockholm. MACRO: esp. Agrotidae, Eupithecia. Life History. Coll.

SWITZERLAND

Loeliger, Robert (Dr.), Susenbergstrasse 20, Zürich. RHOP. MACRO. Migration.

Lüthi, Adrian J., Inneres Sommerhaus, Burgdorf. RHOP. MACRO: esp. Sphingidae. Coll. Ex. Buy. Sell.

Romieux, Jean, chemin des Crêts de Champel 20, Geneva. MICRO: esp. Aegeriidae, Psychidae, Coleophoridae, and Scythrididae. Migration. Coll. Ex.

UNITED STATES OF AMERICA

ALABAMA

*Chermock, Ralph L. (Dr.), Box 2047, University of Alabama, University. RHOP: esp. Satyridae. Phylogeny. Coll. Ex. Buy.

ARIZONA

*Bauer, David L., General Delivery, Cottonwood. RHOP: esp. Papilio machaon group, Anthocharis, Melitaea, Polygonia, Riodinidae, Plebeius icarioides & races. MACRO. Bionomics, Distribution. Coll. Ex. Buy. Sell.

CALIFORNIA

*BAUER, WILLIAM R., 235 Liberty St., Petaluma. MACRO. Life History, Collecting Methods. Coll. Ex. Buy.

*Bio Metal Associates, P.O. Box 346, Beverly Hills.

Carls, Erwin W., 1985 E. Phillips Blvd., Pomona. LEPID.

COBB, MELVYN G., 1066-1/2 West 31st St., Los Angeles 7. RHOP: esp. Satyridae, Papilionidae. MACRO. Coll. Ex. Buy.

*Comstock, John A. (Dr.), P.O. Box 158, Del Mar, San Diego Co. LEPID. Life History. Coll.

Coy, L.P. (Dr.), 911 9th Ave., San Mateo. RHOP: esp. Speyeria, Euchloe. Coll. Ex.

*Creelman, James L., 2214 Logan Ave., San Diego 13. RHOP: Nearctic and South Pacific. Coll. Ex. Sell.

*CRICKMER, NOEL, Borrego Valley, Julian P.O. LEPID. Coll. Ex.

*Davies, Thomas W., 791 Elsie Ave., San Leandro. RHOP. MACRO. Coll. Ex. Buy. Sell.

*Dickenson, Ronald, P.O. Box 563, Atascadero. RHOP: esp. Speyeria, Boloria, Lycaenidae. MACRO: esp. Saturniidae, Noctuidae. Life History. Coll. Ex.

Essig, E.O., 112 Agriculture Hall, Univ. of California, Berkeley 4. LEPID: esp. of western North America. Coll.

*Evans, William H., 8711 La Tuna Canyon Rd., Sun Valley. LEPID: esp. Annaphila, Heliothiinae, Geometridae. Life History, Photography. Coll.Sell.

*Ford, Robert J., 3266 Ardmore Ave., South Gate. RHOP. MACRO. Life History. Coll. Ex. Buy.Sell.

*Friday, F.W., Box 72, Palm Desert. RHOP. Coll. Ex. Buy. Sell.

Graves, John D., 1711 Short St., Berkeley 2. RHOP. MACRO. Coll. Ex. Buy.

*Guedet, Edward F. (Rev.), 1818 Eddy St., San Francisco 15. MACRO: esp. Geometridae. Coll. Ex. Buy.

HALBERT, RICHARD L., 1201 W. 30th St., Los Angeles 7. MACRO: esp. Saturniidae. Life History, Cross-breeding. Coll. Ex. Buy. Sell.

*Hammer, William A., 1923 Evergreen Ave., San Leandro. RHOP: esp. Speyeria, Colias, Oeneis. MACRO. Coll. Ex. Buy.

Hewes, L.I. (Dr.), 114 Edgewood Ave., San Francisco 17. RHOP. MACRO. Coll. Ex.

Hill, Charles, 1350 San Luis Rey Drive, Glendale 8. MACRO: esp.Phalænidae of western Nearctic region. Coll. Ex. Buy.

*Hovanitz, William (Dr.), Dept. of Biology, University of San Francisco, San Francisco 17. RHOP. Genetics.

*Hulbirt, Lowell H., 622 N. Bright Ave., Whittier. RHOP: esp. Lycaenidae, Hesperiidae. Coll. Ex.

KARP, BEN, 3148 Foothill Blvd., La Crescenta. MICRO. Coll. Ex. Buy. Sell.

*KIRKWOOD, CARL W., Box 47, Summerland. LEPID. Coll. Ex. Buy.

Laspe, Charles G., 4044 Hawthorne, Palos Verdes Estates. RHOP: esp. Papilionidae. Coll.

Lewallen, Lawrence L., Div. of Entomology, University of California Citrus Experiment Station, Riverside. MACRO: esp. Phalaenidae, Arctiidae. Taxonomy. Coll. Ex. Buy.

*MARTIN, LLOYD M., Los Angeles County Museum, Exposition Park, Los Angeles 7. RHOP: esp. Speyeria, Euphydryas, Hesperiidae. Life History. Coll.Ex.

*Mattoni, Rudolf H.T., Div. of Botany, University of California, Berkeley 4. RHOP: esp. Philotes, Glaucopsyche. Genonomy, Physiology. Coll. Ex. Buy. Sell.

*McHENRY, PADDY B., 1032 E. Santa Anita, Burbank. RHOP. Original Descriptions of Nearctic Rhop. Coll.

*Meyer, William T., 4450 Kingswell Ave., Hollywood 27. LEPID. Coll. Ex. Buy. Sell.

MILLER, GEORGE F., Box 1065, Palm Springs. RHOP: esp. Strymon. Coll.

*NICOLAY, STANLEY S. (Major), Route #3, 9971 Center Drive, Orange. LEPID. Coll.

*Parker, Dwight E., 1220 S. Alvarado St., Los Angeles. RHOP: Nearctic only. Life History. Coll. Ex.

PRESTON, FLOYD W., 217 E. Barton Rd., Whittier. RHOP: esp. Pieridae. Coll. Ex.

*REEVES, ROBERT T., 318 W. Olympic Blvd., Los Angeles 15. RHOP: esp. of Calif. and Southwest. Life History. Coll.

*Reid, Robert H., Route 3, Box 164, Hemet. RHOP. MACRO. Coll. Ex.

*Roberds, Joseph, 2022 Huntington, Redondo Beach. LEPID.

Schmela, Dora E. (Mrs.), 135 N. Evergreen Drive, Ventura. RHOP. Coll.

*SMITH, CLAUDE I., 161 S. 16th St., Apt.1-B, Richmond. RHOP. MACRO: esp. Amphipyrinae, Heliothiinae, Acontiinae. MICRO: esp. Aegeriidae. Ecology, Life History, Biology. Coll. Ex. Sell.

*SPERRY, JOHN L. (Mr. and Mrs.), 3260 Redwood Drive, Riverside. RHOP: of world. MACRO: esp. Geometridae of world. Coll. Ex. Buy.

*Sternitzky, Robert F., Monte Vista Cabins, Star Route, Laytonville, Mendocino County. RHOP. & MACRO. of world. Coll. Ex. Buy. Sell.

*THORNE, FRED T., 1298 Merritt Drive, Rt. 1, El Cajon. RHOP: esp. Theclinae. Life History. Coll. Ex.

*Tilden, J.W. (Dr.), 125 Cedar Lane, San Jose. RHOP: esp. Hesperiidae. MICRO. Food Relationships, Behavior. Coll. Ex.

*Weber, Bernie H., 359 E. Angeleno Ave., Burbank. RHOP. Coll. Ex.

Williams, Evelyn G. (Mrs.), North San Juan, Nevada County. RHOP. MACRO. Life History. Coll.

Wilson, Henry H., 2531 Marin Ave., Berkeley. Ichneumonoid parasites of LEPID. Coll. Ex.

*WIND, ROBERT G., Route 1, Box 145, Livermore. RHOP: esp. of East Indies. Coll. Ex. Buy. Sell.

COLORADO

*Brown, F. Martin, Fountain Valley School, Colorado Springs. RHOP: esp. Pieridae and Satyridae of neotropics. Distribution. Coll. Ex. Buy.

*Eff, J. Donald, 820 Grant St., Boulder. RHOP: esp. Melitaea, Euphydryas, and Arctic species. Coll. Ex. Sell.

Kostreva, Samuel, Jr., 317 E. Boulder St., Colorado Springs. RHOP. MACRO. Coll. Ex. Buy. Sell.

Minor, W.C., P.O. Box 62, Fruita. RHOP: esp. Rocky Mountain fauna. MACRO. Coll. Ex. Buy. Sell.

*Renk, John J. (Brother), S.J., Regis College, W. 50th & Lowell Blvd., Denver. RHOP: esp. Catagramma. Coloration. Coll. Ex. Buy.

Rotger, Bernard (Rev.), St. Joseph's Church, Capulin. RHOP: esp. of Colorado. MACRO. Coll. Ex. Buy. Sell.

Schryver, C.D., R. 2, Box 93, Arvada. RHOP. Coll. Ex.

CONNECTICUT

Ballard, W.F.R., East Middle Patent Rd., Greenwich.

Bellinger, Peter F., Osborn Zool. Lab., Yale University, New Haven 11. LEPID. Coloration, Genetics. Coll. Ex.

Bullis, Peter E., 239 West Rock Ave., New Haven. RHOP. Coll. Ex.

*Carpenter, S.C., Box 1344, Hartford 1. RHOP. MACRO. Food Plants.

Pease, Roger W., Jr., 57 Yale Station, New Haven. RHOP. MACRO. Coll. Ex.

*REMINGTON, CHARLES L. (Dr.), Osborn Zoological Lab., Yale University, New Haven 11. RHOP: Genetics and Life History. MACRO: Life History.

*REMINGTON, JEANNE E. (Mrs.), c/o Osborn Zool. Lab., Yale University, New Haven 11. Gall-making LEPID: Ecology.

*Schroeter, Otto H. (Col.), 613 Williams St., New London. RHOP. MACRO. Coll. Ex. Buy. Sell.

*Wilhelm, Herman P., Buckingham Rd., Willimantic. RHOP. MACRO. Coll. Ex. Buy. Sell.

DELAWARE

Jones, Frank Morton (Dr.), 2000 Riverview Ave., Wilmington. LEPID: esp. Psychidae. Coll. Ex. Buy.

DISTRICT OF COLUMBIA

*CLARK, AUSTIN H., Smithsonian Institution, Washington 25. RHOP.

*FIELD, WILLIAM D., Division of Insects, U.S. National Museum, Washington 25. RHOP: esp. Lycaenidae.

*FRANCLEMONT, JOHN G., Division of Insects, U.S. National Museum, Washington 25. MACRO: esp. Phalaenidae, Notodontidae, Lymantriidae. Life History. Coll. Ex. Buy.

Shappirio, David G., 4811 17th St., N.W., Washington 11. LEPID. Chemistry of Insect Pigments. Coll.

FLORIDA

*Berry, Dean F., Box 146, Orlando. RHOP: esp. Florida Hesperiidae. MACRO: esp. Catocala, Saturniidae, Sphingidae. Coll. Ex.

Davidson, W.M., 1504 Bodell St., Orlando. RHOP. MACRO. Coll.

Forsyth, Marguerite S. (Mrs.), P.O. Box 96, Florida City. RHOP. MACRO. Coll. Sell.

*Fuller, Stanley V., Cassadaga P.O., Volusia County. RHOP. MACRO: esp. Sphingidae & Catocalinae. Life History. Coll.

*Grimshawe, Florence M. (Mrs.), 766 N.W. 13 Ave., Miami 35. RHOP. MACRO. Coll. Sell.

GEORGIA

*Eustis, Henry W., 2301 Woodbine Rd., Augusta. RHOP. MACRO. Coll. Ex. Buy. Sell.

*Fattig, P.W., Box 788, Emory University. LEPID. Coll.

*Harris, Lucien, Jr., P.O. Box 167, Avondale Estates. RHOP. MACRO: esp. Catocala, Sphinx. Coll. Ex.

*Smith, M. Eugene, Route 2, Newnan. RHOP. MACRO. Life History.

TERRITORY OF HAWAII

*Calkins, Virgil F., P.O. Box 461, U.S. Immig.-Naturalization Service, Honolulu 9, Oahu. RHOP: Nearctic. MACRO: esp. Saturniidae, Sphingidae, Ceratocampidae, Catocala. Coll. Buy. Sell.

French, Ellery W., University of Hawaii, P.O. Box 18, Honolulu 10, Oahu. RHOP. MACRO.

IDAHO

MANNING, JAMES H., 1515 N. 26th, Boise. RHOP: Nearctic. MACRO: esp. Catocala, Sphingidae. Coll. Ex.

Muhonen, Daniel, 1118 N. Twelfth St., Boise.

*WILSON, KENT H., Dept. of Biological Sciences, University of Idaho, Moscow. RHOP: esp. Papilionidae. MACRO: esp. Catocala. MICRO: esp. Jugatae. Life History, etc. Coll. Ex. Buy.

ILLINOIS

BANKS, LESLIE, 900 Gunnison St., Chicago 40. RHOP. MACRO: esp. Geometridae, Notodontidae. Coll.Ex. Buy.

Beall, Geoffrey (Dr.), Research Laboratories, Swift & Company, Chicago 9. Migration.

*BRISTOL, MAURICE L., 511 May St., Elgin. RHOP. MACRO: esp. Apantesis, Catocala, Phalaenidae. Coll. Ex. Buy.

Evey, J.A., Benson. RHOP: esp. Morpho. MACRO: esp. Catocala. Life History. Coll. Ex.

Fulton, Macdonald (Dr.), Dept. of Bacteriology, Loyola School of Medicine, 706 S. Wolcott Ave., Chicago 12. RHOP. Coll.

*Gerhard, W.J., Curator of Insects, Chicago Natural History Museum, Chicago 5. RHOP. MACRO.

*Glenn, Murray O., Magnolia. MACRO: esp. Gelechioidea. MICRO. Life History. Coll. Ex. Buy.

Hessler, Robert, 6510 N. Campbell, Chicago 45. RHOP. MACRO. Coll. Ex. Buy.

*HOLLEY, F.E., 3 E. Parkside, Lombard. RHOP. MACRO: esp. Sphingidae, Saturniidae, Ceratocampidae. Life History. Coll. Ex. Buy.

*IRWIN, RODERICK R., 411 N. Bloomington St., Streator. RHOP. Coll. Ex. Buy.

Jelinek, Anton, 3900 Diversey Ave., Chicago 47. RHOP: of tropics, esp. Morpho, Papilio. Coll. Ex. Buy. Sell.

Kistner, David H., 5031 N. Kolmar Ave., Chicago 30. RHOP: esp. Speyeria. MACRO: esp. Phalaenidae. Distribution. Coll. Ex.

*LAUCK, ALBERT G., 2716 Grandview Ave., Alton. RHOP: esp. Oeneis, Erebia, Boloria, Lycaenidae. Coll. Ex.

Leuschner, Ronald, 1172 S. Wenonah Ave., Oak Park. RHOP: esp. Speyeria, Boloria, Melitaea. MACRO. Coll. Ex.

*McElhose, Arthur L., 816 N. Belmont Ave., Arlington Heights. RHOP. MICRO. Coll.

*Panske, Leonard G., 878 N. Hermitage Ave., Chicago 22. RHOP. MACRO. Life History. Coll. Buy.

Phillips, Leonard S., Loyola University Medical School, 706 S. Wolcott Ave., Chicago 12. RHOP. MACRO: esp. Catocala. Coll. Ex. Buy. Sell.

Rutkowski, Frank E., 4840 W. Gregory St., Chicago 30. MACRO: esp. Saturniidae, Phalaenidae, Sphingidae. MICRO. Life History. Coll. Buy.

Sasko, V.G. (Prof.), 1937 W. Chicago Ave., Chicago 22. RHOP: esp. Papilionidae, Nymphalidae, Morpho of western hemisphere. MACRO: esp. Sphinx, Saturniidae, Lasiocampidae and smaller moths, Catocala. Life History. Ex. Buy. Sell.

*SCHOENHERR, WILLIAM H., 225 Cedar Ave., Danville. RHOP: esp. Pieridae, Papilio. MACRO: esp.Sphingidae. Distribution, Life History. Coll. Ex. Buy. Sell.

Sicher, Harry (Dr.), Loyola University School of Dentistry, 1757 W. Harrison St., Chicago 12.

*WOODCOCK, HAROLD E., 6115 Newport Ave., Chicago 34. LEPID. Coll. Ex. Buy.

Wren, George R., 5806 Drexel Ave., Chicago 37. RHOP: esp. Satyridae. Mimicry. Coll.

*Wyatt, Alex K., 5842 N. Kirby Ave., Chicago 30. RHOP. MACRO: esp. Eubaphe, Heliothiinae. Life History. Coll. Ex.

INDIANA

Shields, James, 503 West Sixth St., Marion. RHOP: esp. Papilionoidea. Coll. Ex. Buy.

IOWA

Frus, C.J. (Mrs.), Cromwell.

KANSAS

Hoffman, James, 1039 S. Mulberry, Ottawa. RHOP: esp. Papilionidae, Pieridae, Nymphalidae. MACRO: esp. Sphingidae, Saturniidae. Coll. Ex. Buy.Sell.

Howe, William, 822 E. Eleventh St., Ottawa. RHOP. MACRO: esp. Sphingidae, Catocalinae. MICRO. Life History, Parasites. Coll. Ex. Buy.

*STALLINGS, DON B., 216 W. First St., Caldwell. RHOP: esp. Strymon, Euphydryas, Hesperia, Megathymus. Racial Distribution, Seasonal Forms. Coll. Ex. Buy.

KENTUCKY

*BISHOP, JOHN A. (Dr.), Jeffersontown. RHOP. MACRO. Coll. Ex. Buy. Sell.

*Cook, Carl, Crailhope. RHOP: esp. Papilionidae of world. Coll. Ex. Buy. Sell.

Unseld, James, Jr., Gravel Switch. RHOP: esp. Papilio. MACRO. Life History Photography. Coll. Ex. Buy.

LOUISIANA

Berg, George H., 5724 Painters St., New Orleans. RHOP: esp. Papilionidae of world. Coll. Ex. Buy.

MAINE

*Brower, A.E. (Dr.), 5 Hospital St., Augusta. RHOP: esp. of eastern U.S.A. MACRO: esp. Catocala. MICRO: esp. Aegeriidae. Life History. Coll. Ex. Buy. Sell.

*GREY, L. PAUL, R.F.D., Lincoln. RHOP: Argynninae only. Coll. Ex. Buy. Sell.

MARYLAND

Blevins, T.B. (Dr.), 3412 Varnum St., Brentwood. RHOP: Papilionoidea, esp. Nymphalidae.

Cross, Frank C., 9413 Second Ave., Silver Spring. RHOP.

Fales, John H., 1917 Elkhart St., Silver Spring. RHOP: esp. of Maryland. Migration. Coll. Ex.

Stein, George L., 735 Washington St., Cumberland. RHOP. MACRO. Life History, Distribution. Coll. Ex. Buy. Sell.

MASSACHUSETTS

Adler, Julius, O-23 Lowell House, Harvard University, Cambridge 38. RHOP: Nearctic. Coll. Ex.

*Alexander, Charles P. (Prof.), Fernald Hall, University of Massachusetts, Amherst. Classification & Distribution.

*Bailey, Norman S. (Prof.), 16 Neponset Ave., Hyde Park 36. Life History, Ecology.

Cady, Michael E., 21 Border St., Dedham. RHOP. MICRO. Coll. Ex. Buy.

CARPENTER, A.J., 236 Huntington Ave., Boston. RHOP. Coll. Buy.

*Carpenter, Frank M. (Prof.), Biological Labs., Harvard University, Cambridge 38 . Fossil Insects.

*Coher, Edward I., 12 Harvard Terrace, Allston 34. Coll. Sell.

Epstein, Hans J., 65 Walker St., Cambridge 38. RHOP: esp. Papilionidae. MACRO: esp. Sphingidae. Coll. Ex. Buy. Sell.

*Gottschalk, Carl W. (Dr.), Dept. of Physiology, Harvard Medical School, 25 Shattuck St., Boston 15. RHOP: esp. of Arctic. Pigment Metabolism. Coll. Ex. Buy. Sell.

*Johnston, William M., 383 South St., Jamaica Plain. RHOP: esp. of New England. Coll.

Kamp, George W., 44 Holmes Rd., Dedham. Coll. Ex. Buy.

*Learned, Elmer T. (Dr.), 542 Maple St., Fall River. RHOP. MACRO. Genetics.

McCABE, DAVID T., 58 Thackeray Rd., Wellesley Hills 82. RHOP: esp. Colias. MACRO: esp. Catocala. Coll.

Minot, George R. (Dr.), 71 Sears Rd., Brookline 46. RHOP. Coll. Ex. Buy.

*Robinson, Paul F., 115 Union St., Westfield. RHOP: of New England. Life History, Physiology. Coll. Buy.

*ROGERS, W. PRESCOTT, 353 Lincoln Ave., Fall River. RHOP. Coll. Ex. Buy.

*Smith, Marion E. (Dr.), Fernald Hall, University of Mass., Amherst. MACRO: esp. Arctiidae. Life History. Univ. Coll.

Williams, Carroll M. (Prof.), Biological Labs., Harvard University, Cambridge 38, RHOP. MACRO: esp. Saturniidae. Physiology of metamorphosis. Coll. Buy.

MICHIGAN

*Beebe, Ralph, 4169 Tenth St., Ecorse 29. MICRO. Distribution and Food Plants in Michigan. Coll.

*Clench, Harry K., 1270 Sudbury, Willow Run Village. RHOP: Lycaenidae, esp. Theclinae. Evolution, Phylogeny, Systematics. Coll. Ex.

*Crystal, Bruce W., 7955 "F" St., Dexter. RHOP. Aberrations. Coll.

*Hynes, Vonta P. (Mrs.), 152 Meachem Ave., Battle Creek. LEPID. Life History. Coll. Ex. Buy. Sell.

*McALPINE, WILBUR S., 636 S. Woodward Ave., Birmingham. RHOP: esp. Riodinidae. MACRO: local. Life History. Coll. Ex. Buy. Sell.

*Newman, John H., 9821 Peer Rd., R.F.D. #1, South Lyon. LEPID: of Michigan. Coll. Ex.

*Nielsen, M.C., 13661 Castleton, Detroit 27. RHOP. MACRO: esp. Sphingidae, Saturniidae, Phalaenidae. Coll. Ex.

Perkins, Owen A., 1605 Crooks Rd., Royal Oak. LEPID: esp. of Michigan. Classification, Distribution. Coll. Ex. Buy.

Richard, Roger E., 1832 N. Gulley Rd., Dearborn. RHOP: esp. Asterocampa, Libythea. Photography of Life History. Coll.

Saley, Betty, 628 Fairbrook, Northville.

*Vogel, Harold A., 9121 Kresge St., Detroit 13. RHOP. MACRO. Coll. Ex.

MISSISSIPPI

*Mather, Bryant, P.O. Box 217, Clinton. RHOP. Coll.

MISSOURI

*MEINERS, EDWIN P. (Dr.), 6651 Enright Ave., St. Louis 5. RHOP. MACRO: esp. Arctiidae. Coll. Ex. Buy.

*O'BYRNE, HAROLD I., Iberia. LEPID. Ecology, Behavior. Coll. Ex.

*Pickel, Benjamin H., 3619 Gordon Ave., Overland 21. RHOP: esp. Theclinae. Migration. Ex. Buy. Sell.

*REMINGTON, P. SHELDON, 5570 Etzel Ave., St. Louis 12. RHOP: Hesperiidae, esp. Megathymus and Hesperia, Lycaenidae, Oeneis, Erebia. MACRO: esp. Sphingidae, Saturniidae, Catocala. Coll. Ex. Buy.

*Thomas, George W., 102 Whitten Hall, Dept. of Entomology, University of Missouri, Columbia. MACRO: esp. Phalaenidae (Plusiinae). Parasites. Coll. Ex. Buy. Sell.

NEBRASKA

FROEMEL, E.A., Columbus. RHOP. MACRO: esp. Catocala. Coll. Ex. Buy.

NEW HAMPSHIRE

*Gerould, John H. (Prof.), 36 Occom Ridge, Hanover. RHOP: Pieridae, esp. Colias. MACRO: esp. Bombyx, Genetics, ecology of Colias; Anatomy and circulation of Bombyx. Mimicry. Coll.

*Lennox, Donald J., R.F.D. #1, Whitefield. RHOP. MACRO. Life History. Coll. Ex.

NEW JERSEY

Boone, Peter, R.F.D. 3, Box 172, Princeton. MACRO: esp. Sphingidae, Ceratocampidae.

*BUCHHOLZ, OTTO, 493 Markthaler Place, Roselle Park. RHOP. MACRO. Coll. Ex. Buy.

Cadbury, John W. 3rd, Spung Hollow, R.D. #1, Pemberton. MACRO: esp. Phalaenidae, Notodontidae, Sphingidae. Coll. Ex. Buy. Sell.

Comstock, W.P., 117 Lincoln Ave., Newark 4.

*DOS PASSOS, CYRIL F., Washington Corners, Mendham. RHOP: Satyridae, esp. Oeneis, Erebia. Coll. Buy.

*EHRLICH, PAUL R., 538 Academy St., Maplewood. RHOP: Nearctic, esp. Papilio machaon-ajax complex. MACRO. MICRO. Alpine Forms, Distribution. Coll. Ex. Buy. Sell.

Fleming, Henry, Box 338, Coytesville.

MUELLER, JOSEPH, 610 Springfield Ave., Newark 3. LEPID: New Jersey only. Life History. Coll.

Osborne, Melville W., 2100 Price St., Rahway.

*RAWSON, GEORGE W. (Dr.), c/o Ciba Pharmaceutical Products Inc., Summit. RHOP. MACRO. Ecology, Distribution, Biochemistry. Coll. Ex.

Ziegler, J. Benjamin (Dr.), 18 Baltusrol Place, Summit.

NEW MEXICO

Eyer, John R. (Dr.), New Mexico Agricultural Experiment Station, State College. MICRO: esp. Lyonetiidae, Hepialidae, Micropterygidae. Morphology, Life History. Coll. Ex.

Standard, O.D., 322 E. Coronado Ave., Belen. RHOP: esp. Papilionidae of world. Coll. Ex. Buy. Sell.

NEW YORK

Arntz, Arnold, 110 Spring St., Syracuse. LEPID: esp. of tropics, and Nearctic Sphingidae, Catocala.

Beebe, William (Dr.), Zoological Park, New York 60. RHOP. MACRO. Ecology, Life History. Coll.

*Bell, Ernest L., 150-17 Roosevelt Ave., Flushing. RHOP: esp. Hesperiidae.

*Butterfly Store, 77 Madison Ave. at 28th St., New York 16. Buy.

BUTTERFLY WORLD SUPPLY HOUSE, 289-291 E. 98th St., Brooklyn 12. Ex. Buy. Sell.

Buxbaum, Paul, 360 Central Park West, New York 25. RHOP: esp. Papilionidae. Coll. Ex. Buy.

*Casselberry, R.C., 55 Edgemont Rd., Scarsdale. RHOP: esp. Papilio. MACRO: esp. Catocala. Coll. Ex. Buy. Sell.

Eisner, Thomas, 45 Lynwood Rd., Scarsdale. RHOP: esp. Riodinidae. Coll. Ex. Buy. Sell.

Farquhar, Donald W. (Dr.), 185 Claremont Ave., New York 27. RHOP. MACRO. Food Plants, Distribution, Life History, etc. Coll. Ex.

*Forbes, William T.M. (Prof.), Comstock Hall, Cornell University, Ithaca. RHOP: esp. Ithomiinae. MACRO. MICRO. Zoogeography, Basic Classification. Coll. Ex. Buy.

*FREDERICK, ALBERT C., 6 Matilda St., Albany 2. RHOP: esp. Lycaenidae, Hesperioidea. Coll. Ex.

Gatti, Arthur, 63 W. Seventh St., Mt. Vernon. RHOP. MACRO. Coll. Ex. Buy. Sell.

Gillham, Nicholas W., No. 4 Washington Square North, New York. RHOP: esp. Lycaenidae, Melitaea, Euphydryas, Hesperiidae. Coll. Ex. Buy. Sell.

*HEINEMAN, BERNARD, 247 Church St., New York 13. RHOP: of Jamaica. MACRO: esp. Catocala. Coll.

Hellman, Geoffrey T., 228 E. 61st St., New York 21.

*HESSEL, SIDNEY A., 8 Woodmere Blvd. So., Woodmere, L.I. RHOP. MACRO: esp. Catocala. Coll.

*KEJI, JOSEPH A., Biggs Hospital, Ithaca. MACRO. Life History. Coll.

*KELLNER, JOHN J., 41-03 171st St., Flushing, L.I. RHOP. MACRO. Coll. Ex. Buy.

Kessler, Francis D., 333 Elmwood Ave., Buffalo 9. MACRO: esp. Saturniidae. Life History. Buy.

*KIMBALL, CHARLES P., 205 Culver Road, Rochester. LEPID. Chemical Baits. Coll. Ex. Buy.

*KLOTS, ALEXANDER B. (Prof.), City College of New York, 17 Lexington Ave., New York 10. RHOP: esp. Pieridae, Boloria, Colias. MICRO: esp. Crambinae. Ex. Buy.

Kolyer, John M., 23 High St., East Williston. RHOP: esp. Papilionidae. MACRO. Coll. Buy.

*McDunnough, J. (Dr.), Research Associate, Dept. of Insects, American Museum of Natural History, Central Park West at 79th St., New York 24. LEPID: esp. Saturniidae.

*McELVARE, ROWLAND R., 26 Bogart Ave., Port Washington, L.I. MACRO: esp. Heliothiinae. Coll. Ex. Buy.

Miller, Howard C., 222 N. Collingwood Ave., Syracuse 6. RHOP: esp. tropical Pieridae, Nymphalidae. MACRO. Coll. Buy.

*Mills, Brooks B., Fox Lane, R.F.D. #2, Mt. Kisco. RHOP: esp. Nymphalidae. MACRO: esp. Phalaenidae, Saturniidae. Life History. Coll.

Morris, John W., 2704 W. Genesee St., Syracuse 9. RHOP: esp. Papilionidae. MACRO: esp. Sphingidae. Life History. Coll. Ex. Buy.

*MUELLER, PAUL H., 965 Franklin Ave., Brooklyn 25. RHOP. Coll. Buy.

*NABOKOV, VLADIMIR (Prof.), Dept. of Russian Literature, Cornell University, Ithaca. RHOP: Holarctic; Lycaenidae. MACRO: Palaearctic.

*Rindge, Frederick H., American Museum of Natural History, New York 24. MACRO: esp. Geometridae. Life History. Coll. Ex. Buy. Sell.

*RUPERT, LAURENCE R., 1122 South Main St., Horseheads. MACRO: Geometridae, esp. Ennominae. Life History. Coll. Ex. Buy.

Sanford, Leonard J., American Museum of Natural History, 79th St. and Central Park West, New York 24. RHOP: Satyridae, esp. Enodia. MACRO: Saturniidae and Sphingidae only. Distribution, Habitat. Ex.

*Shoumatoff, Nicholas, Box 333, Bedford. LEPID: of eastern U.S.A. and West Indies. Distribution, Morphology. Coll. Ex.

*Spelman, Morris, 2781 Grand Concourse, New York 58. RHOP. Ex. Buy. Sell.

Vrana, Richard T., Laurel Hill Road, Northport. Coll. Ex. Buy.

Wagner, Richard, 4533 Third Avenue, Bronx 57. RHOP: esp. Nymphalidae, Papilio. MACRO: esp. Catocala, Saturniidae. Life History. Coll. Ex.

Wilcox, LeRoy, Speonk, L.I. LEPID. Coll. Ex. Buy. Sell.

*Zappalorti, Michael, 7415 3rd Ave., Brooklyn 9. RHOP. & MACRO: of world. Coll. Ex. Buy. Sell.

OHIO

*BAKER, CLEMENT W., P.O. Box 455, Waynesburg. RHOP. MACRO. Coll. Buy.

Bock, Theodore, 70 Ehrman Ave., Cincinnati 20. RHOP: esp. Ornithoptera, Papilio, Agrias, Morpho. Coll. Ex. Buy. Sell.

*Braun, Annette F. (Dr.), R.R 13, Box 41C, Cincinnati 30. MICRO: esp. Tineoidea. Life History. Coll.

Chase, Hazel (Mrs.), 272 N. Union St., Galion. RHOP. MACRO: esp. Saturniidae, Arctiidae, etc. Life History, Habits, Ecology. Coll. Ex. Buy. Sell.

Cobb, Robert B., 1109 Asbury Rd., Cincinnati 30. RHOP. MACRO. Coll. Ex. Sell.

Duhlmeier, William, 2535 Indian Mound Ave., Norwood 12.

*Ferguson, Elias A., 1213 Bellflower Ave. S.W., Canton 10. RHOP: esp. Papilio. MACRO: esp. Catocala. MICRO. Coll. Ex. Buy. Sell.

*PRICE, HOMER F., Payne. RHOP. Coll.

Romine, Ray, 954 Westwood Drive, Marion. RHOP. MACRO. Coll. Ex. Buy.

*Smalley, Stephen B., 6129 Glade Ave., Cincinnati 30. RHOP. Life History Photography. Coll. Ex. Buy.

Thomas, Edward S., Ohio State Museum, Columbus 10. RHOP: esp. Hesperioidea, Hair-streaks. MACRO: esp. Catocala. Life History, Distribution.

*Voss, Edward G., American Commons Club, Granville. LEPID: of Michigan. Coll. Ex.

OKLAHOMA

Reinthal, Walfried J. (Dr.), Dept. of Zool. Sciences, University of Oklahoma, Norman. LEPID. Biotopical Conditions, Geographical Races & Variability. Coll. Ex. Sell.

OREGON

*BAKER, JAMES B., Baker. LEPID. Coll. Ex.

*Macy, Ralph W. (Prof.), Reed College, Portland 2. RHOP. MACRO. Biology, Taxonomy. Coll. Ex. Buy.

PENNSYLVANIA

*Ackermann, Otto, 639 Walnut St., Irwin. RHOP. MACRO. Coll. Sell(plastic mounts).

*Adams, J.W., 32 Pleasant St., Philadelphia 19. RHOP: esp. Nearctic Hesperiidae. Taxonomy; Distribution in Relation to Food Plants. Coll. Ex.

*CARY, MARGARET M. (Mrs.), Ellet Lane and Wissahickon Ave., Mt. Airy, Philadelphia 19. MACRO: esp. Sphingidae and Catocala. Life History. Coll. Buy.

Ehle, George, 314 Atkins Ave., Lancaster. RHOP. Coll. Sell.

*Jay, William, 6358 McCallumn St., Germantown, Philadelphia. RHOP. MICRO. Buy.

Mergott, Winston B., 549 Oxford Blvd., Pittsburgh 16. RHOP. MACRO. Coll. Ex.

*MERKER, C.G., 1520 Cooper St., N.S. Pittsburgh 12. LEPID. Coll. Ex. Buy. Sell.

*Moyer, Howard C., Box 238, R.D. #2, Sinking Spring. RHOP. MACRO. Coll. Ex. Sell.

Murchie, William R., Box 203, Sharon. RHOP. Coll. Ex.

*Peters, George, Adamstown. RHOP. MACRO. Coll. Ex. Buy. Sell.

Rupprecht, Jerome (Rev.), St. Vincent Archabbey, Latrobe. RHOP. MACRO. Coll. Ex.

*SWEADNER, WALTER R. (Dr.), Section of Insects and Spiders, Carnegie Museum, Pittsburgh 13. LEPID. Coll. Ex. Buy.

*Tietz, Harrison M. (Prof.), Dept. of Zoology, Pennsylvania State College, State College. MACRO: esp. Phalaenidae. Life History. Coll. Ex.

PUERTO RICO

Ramos, J.A. (Prof.), Biology Dept., College of Agriculture and Mechanic Arts, Mayaguez. RHOP. Coll.

SOUTH DAKOTA

Sweetman, Harry E., 300 N. Dakota Ave., Sioux Falls. RHOP. & MACRO: esp. of central northwest U.S. Life History. Coll. Ex. Buy. Sell.

TEXAS

Anderson, C.A., 3209 Centenary, Dallas 5. RHOP: esp. Danaus plexippus. Life History, Migration.

*Bridwell, L.H., Box 44, Forestburg. RHOP: esp. Incisalia. MACRO: esp. Catocala. Ex. Buy. Sell.

*Freeman, Hugh A., 1335 Overhill Drive, Garland. RHOP: esp. Hesperioidea, Theclinae. Taxonomy, Ecology. Coll. Ex. Buy. Sell.

*Glick, Perry A., Bureau of Entomology & Plant Quarantine, Box 1218, Waco. RHOP: esp. Papilionidae. MACRO: esp. Catocala, Saturniidae. Aerial Insect Dissemination and Migration, Cotton Insects. Coll. Buy.

Kinch, Everard M., 168 Parkside Dr. E., Fort Worth. RHOP. Coll. Ex.

*Orchard, C.D., 803 W. Lynwood, San Antonio 1. Coll.

*STRUCK, B., P.O. Drawer 271, Brownsville. RHOP.

UTAH

*Downey, John C., Biology Dept., University of Utah, Salt Lake City 1. RHOP: esp. Lycaenidae. Coll. Ex.

Phillips, G. Lylle, 2746 Adams St., Salt Lake City 6.

PHILLIPS, W. LEVI, 985 S. Third East, Salt Lake City 4. MACRO: esp. Pseudohazis.

VIRGINIA

*KING, H.L., Box 91-A, Rt. 2, Roanoke. RHOP. Coll. Ex. Buy. Sell.

WASHINGTON

*Anderson, Andrew, P.O. Box 192, Pateros. RHOP. Coll. Ex.

*COOK, WILLIAM C. (Dr.), 219 Newell St., Walla Walla. MACRO: esp. Phalaenidae. Ecology, Distribution. Coll. Ex.

*Frechin, Donald P., 1504 N. Lafayette, Bremerton. RHOP: esp. Euphydryas, Mitoura. MACRO: esp. Washington diurnals. Life History. Coll. Ex. Buy.

Henriksen, Emily (Mrs.), East Sound (Orcas Island). RHOP. MACRO. Coll. Ex. Sell.

*Hopfinger, John C., Brewster. RHOP: esp. Satyridae, Lycaenidae. MACRO: esp. Saturniidae. Migration. Coll. Ex. Buy. Sell.

Jennings, Dean, 2825 Louisiana, Longview.

*Johnston, Edward C., 2268 E. 60th St., Seattle 5. LEPID. Coll. Ex.

Riesland, LeRoy G., 1111 Warner St., Sedro Woolley. RHOP. MACRO. Life History. Coll.

*Whittaker, Robert H. (Dr.), Dept. of Zoology, Washington State College, Pullman. RHOP. Ecology, Distribution. Coll.

WISCONSIN

*Arnhold, F.R., Route 3, Chippewa Falls. RHOP. MACRO. Coll. Ex. Buy.

Euting, Neil A., Route 4, Box 11B, Oconomowoc. RHOP. MACRO. Coll. Ex. Buy.

*GRIEWISCH, LOUIS W., 114 Gray St., Green Bay. RHOP. MACRO. Coll. Ex. Buy.

Jablonski, Raymond, 922 E. Knapp St., Milwaukee. RHOP; esp. Papilio, Thecla. Life History, Migration. Coll. Ex. Buy. Sell.

*MOECK, ARTHUR H., 301 E. Armour Ave., Milwaukee 7. RHOP. Coll. Ex. Buy.

Olson, Paul J., 4122 Mineral Point Rd., Madison 5. MACRO: esp. Catocala.

Schirmer, George F., 2912 N. 45th St., Milwaukee 10. RHOP: esp. Papilionidae, Pieridae, Nymphalidae, Morphidae, Brassolidae. Coll. Ex. Buy. Sell.

*SIEKER, WILLIAM E., 119 Monona Ave., Madison 3. RHOP. MACRO: esp. Sphingidae, Saturniidae, Citheroniidae. Coll. Ex. Buy. Sell.

*Stauffacher, Mrs. Emil W., 2208 12th St., Monroe. RHOP. MACRO: esp. Saturniidae. Life History. Coll. Ex. Buy. Sell.

*ZIEMER, S.E., 715 Dorelle St., Kewaunee. LEPID. Coll. Ex. Buy. Sell.

WYOMING

Downey, Duke, 51 W. 4th St., Sheridan. RHOP. MACRO. Life History. Coll. Ex. Buy. Sell.

*Glasgow, Clyde L., P.O. Box 24, Daniel. LEPID. Coll. Ex. Sell.

VENEZUELA

LICHY, RENÉ, Parque Sanabria 5 (La Pastora), Caracas. RHOP: Venezuelan only, esp. Eurema. MACRO: esp. Sphingidae of the world. Zoogeography, Ecology. Coll. Ex. Buy.

TOO LATE FOR CLASSIFIED INCLUSION

*Albright, Ray, Dayton, Oregon. RHOP. Coll. Ex.

Clarke-Macintyre, William, Cojimies, Manabi, ECUADOR.

de Lesse, Hubert, 45 bis rue de Buffon, Paris V^{e}, FRANCE. RHOP: esp. Nymphalidae, Satyridae, Erebia. Coll. Ex.

*Driesbach, Robert R., 301 Helen St., Midland, Mich. LEPID: of Mich. Coll. Ex.

*Frederick, E.J., 501 Pennsylvania Ave., Richmond, Calif. LEPID: local and tropical. Ex.

Gibbs, J. Paxton, Box 277, Granville, Ohio.

*Hall, Arthur D., Great Village, Nova Scotia, CANADA. MACRO: esp. Acronicta, Notodontidae, Geometridae. Coll. Ex.

Harvey, W.B., Box 52, Wall, South Dakota. RHOP. MACRO. Coll. Ex. Buy. Sell.

Kesselring, Jorge, Caixa postal 6, João Pessoa (Paraiba), BRAZIL. RHOP. MACRO. Life History. Coll. Ex. Buy. Sell.

Klimesch, Joseph, Linz a.d. Donau, Donatusgasse 4, AUSTRIA. LEPID: esp. Nepticula, Coleophora, etc. Leaf Miners. Life History, Genetics. Coll. Ex. Sell.

*Lindsey, A.W. (Prof.), Dept. of Biology, Denison University, Granville, Ohio. RHOP: esp. Nearctic Hesperioidea. Taxonomy.

*Michener, C.D. (Prof.), Dept. of Entomology, University of Kansas, Lawrence, Kansas. RHOP. MACRO: esp. Saturniidae.

*Murphy, Gardner, 16 Chauncy St., Cambridge 38, Mass.

Myers, Joseph A., P.O. Box 3074, University Station, Gainesville, Fla. LEPID. Coll. Ex. Buy.

Smith, Edgar A., 1806 Orchard Lane, Merced, Calif. LEPID. Life History Photography. Coll. Ex. Buy. Sell.

*TOWERS, ABNER A., 2421 Sagamore Drive N.W., Atlanta, Ga. RHOP. & MACRO: Nearctic. Coll. Ex.

VERNON, JOHN B., Radio Security Det. "E", APO 953, c/o Postmaster, San Francisco, Calif. RHOP: esp. Papilionidae, Pieridae. Coll. Ex. Buy. Sell.

*Young, Frank N. (Dr.), Dept. of Zoology, Indiana University, Bloomington, Ind. Extinction of Rhop. by human agencies.

SUMMARY

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